

# FLIGHT

The  
AIRCRAFT ENGINEER  
AND AIRSHIPS

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Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport  
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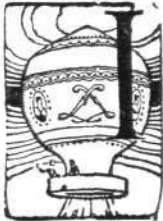
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## EDITORIAL COMMENT



It is a very healthy and welcome testimony to the weight now given to good taste in our scheme of life that the House of Commons should have appointed a special committee to consider whether sky-writing in its various aspects ought to be allowed, controlled, or forbidden. Perhaps

there was once a time when we British deserved the French taunt that we were a "nation of shopkeepers." It need not be thought that the French themselves saw anything derogatory in honourable commerce, and in actual fact the French themselves are one of the foremost manufacturing and trading nations of the world. The sting of the words lay in the insinuation that we British did not allow our national actions to be influenced by anything but considerations of filthy lucre. We were supposed not to allow due weight to considerations of art and beauty and the other influences which, in the classic phrase, are supposed to make life "humaner." It is rather instructive to reflect that more recently we ourselves have brought a similar sort of charge against the United States in our sarcastic remarks about the Almighty Dollar. The expression, we believe, was invented by an American, but we adopted it with gusto.

### The Sky Writing Report

How far we British now are from deserving the old French taunt is evident from the care with which we scrutinise every sort of suggestion of new forms of advertising. Advertisements at their worst would justify the old taunt. There are few of us who do not shudder to reflect how not so long ago railway journeys through beautiful British scenery were marred by lines of advertisement boards set up in the fields beside the line—and we regret to say that all of these boards have not yet been removed. On the other hand, the movement to ally art with commercial advertising is no new thing. The movement, so far as our memory goes, started with the purchase by Pears Soap of Sir John Millais' beautiful picture "Bubbles" and its use as a poster to advertise that popular brand of soap. Now our advertisement

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6 "	16	6	6 "	\$4.40		6 "	17	6
12 "	33	0	12 "	\$8.75		12 "	35	0

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### DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- July 8-9. King's Cup Air Race, start and finish Brooklands.
- July 9. R.A.F. Athletic Championships at Uxbridge.
- July 9-10. International Tourist Rally and Meeting, Clermont-Ferrand.
- July 10. Northamptonshire Ae.C. Meeting, Banbury.
- July 11-12. Cricket: R.A.F. v. Civil Service at Chiswick.
- July 14. International Rally, Saint-Brieuc.
- July 16-17. International Meeting, Dieppe.
- July 21. General Meeting of R.N.F.C. in the R.U.S.I., 5.30 p.m.
- July 22-31. International Meeting, Zurich.
- July 23. Northants Ae.C. Meeting at Kineton.
- July 23-24. York County Aviation Club "At Home," Sherburn-in-Elmet.
- July 30-31. Skegness Air Pageant.
- Aug. 1. Cowes Air Pageant.
- Aug. 6. Newcastle Air Meeting, Cramlington.
- Aug. 6. London-Newcastle Air Race.
- Aug. 11-28. International Touring Competition, Berlin.
- Aug. 15-16. Cricket: R.N. v. R.A.F. at Lords.
- Aug. 19-21. 4th Annual Canadian Air Pageant, St. Hubert, Quebec.
- Aug. 20. Ryde Air Pageant.
- Sept. 3. Leicester Chamber of Commerce Day, at Desford.
- Sept. 4. Divine Service at Ratcliffe Aerodrome, 2.30 p.m.
- Sept. 5. F.A.I. Conference at The Hague.
- Sept. 8. International Meeting, Vicenza, Italy.
- Sept. 24. Air Display at Hillmans' Aerodrome, Gallows Corner, Brentwood.
- Sept. 25. Gordon Bennett Balloon Race, Basle.
- Oct. 1. Bristol and Wessex Ae.C. Garden Party.
- Oct 18. Aero Golfing Society: Cellon Challenge Cup, West Hill G.C.
- Nov. 18-Dec. 4. Paris Aero Show.

hoardings display quite a lot of most excellent art ; and we are proud to think that the aircraft firms in particular have entered heart and soul into the movement to make commercial advertising a thing of beauty. The advertisement pages in FLIGHT week by week bear ample testimony to this fact.

The movement to protect the natural beauties of the country from advertising is a somewhat recent growth. It must be remembered that though an advertisement may be a thing of beauty in itself, it may become an atrocity if displayed in the wrong place. The gems of the Tate Gallery would be an abomination if they were hung along the rocks of the Cheddar Gorge or on the hillsides of the Trossachs. Our national feeling is now awake to the fact that there must be no incongruity in these matters. The representatives of advertising interests are themselves seldom unresponsive to that instinct, and they have co-operated in securing the removal of some of the worst eyesores which a past generation permitted.

Now and again, however, even in these days, the old controversy between what will pay and what would be inartistic shows signs of breaking out afresh. When Major Savage produced his apparatus for projecting signs on the clouds by night, a rather hot skirmish was waged in the correspondence columns of the press. We began to hear the old arguments "It pays" and "It's ugly" taking the lists against each other once more. Fortunately the controversy did not get very far. The House of Commons intervened by setting up a select committee.

On another page we publish the findings and a summary of the observations of the report just issued by that committee. It has seldom been our good fortune to read a better report by such a body. In brief, it forbids "sky-shouting" from a loud speaker altogether ; it imposes no restrictions at all on smoke-writing on weekdays ; and it imposes the minimum of restrictions on night sky-writing. The marshalling of the evidence and the weight given by the committee to the various considerations of art and commercial interests are quite admirable.

Sky-shouting has not, we believe, been practised in this country. It is, so far as we know, an American practice, and it lends new point to our criticism that in the United States it is not forbidden to make life hideous for the sake of the Almighty Dollar. If any would like to see (or hear) sky-shouting introduced into Great Britain, we should all spurn him as a very sordid soul. The select committee of the House of Commons has our gratitude for saving us from a very dreadful thing.

As for smoke-writing, it is, in general opinion, a rather elegant form of advertising. The smoke in itself is a pretty thing, and as such it is used at the Royal Air Force Display. The skill of the pilots who use it makes the operation a very enjoyable thing to watch. The announcements have to be brief, and so there is no chance of introducing the more vulgar elements of advertising—for we must admit that all advertising has not yet been quite purged of traces of vulgarity. At the best and at the worst, the wind in this country is seldom entirely at rest, and so the letters do not remain long to delight or annoy their readers. Quite apart from any friendly feelings which we may entertain for

Major Savage, we should be genuinely sorry if we were never to see smoke-writing again.

Night sky-writing by means of new forms of projectors occupied most of the attention of the committee, and in their remarks on the subject we see how the claims of art and commerce received equal consideration. If anything, the claims of art were perhaps allowed to weigh a trifle the more heavily. We are glad that this should have been so. It represents the reaction against the old-time spirit which gave rise to the French taunt, and even yet we think that we as a nation have more to fear from too much commercialism than from too much sentiment. This slight bias also means that the approval of night sky-writing should satisfy those who have feared that it would become a new horror to jar the nerves of beauty-lovers. The case, in fact, has not been decided against the claims of art and beauty. The decision means that the amenities of life will not suffer so long as the writing is confined to urban areas. In the country it is felt that the blazoning of advertisements across the clouds would be inharmonious. This restriction will not do much harm to the interests of the advertisers who may employ night sky-writing, for they are more likely to wish their appeals (probably rather expensive appeals) to be addressed to the masses in the towns rather than to the simple villagers. Signs in the sky when seen over a town will seem rather of the nature of the gaudy flashing signs with which we are all familiar in Piccadilly Circus and elsewhere. Some people may object to all illuminated advertisements, but they can hardly say that the town will be made much worse by signs overhead than it is already with signs on the walls. At least it will be easier to keep the eyes away from the signs up above.

Apart from all these considerations, the committee members themselves were quite favourably impressed when they saw a demonstration of Major Savage's apparatus. They had, they admitted, started with a feeling rather unfavourable, but when they saw the demonstration they found it "far more pleasant than many of the permanent forms of advertising to which the people of this country are unfortunately too accustomed." They concluded that criticisms from people who have not seen the apparatus in action are not really of much value; and that we can well believe. A few precautions are necessary, to prevent the beams from interfering with the beams of air defence searchlights, from misleading air pilots flying by night, and from being mistaken by mariners for lighthouses. These precautions may need to be embodied in legislation, but the matter should not be a complex one.

Far more important in our view than the advertising aspect of this case is the potential utility of Major Savage's invention for helping in the air defence of the country. It will, of course, need to be tried out ; and the report has made it clear that unless the cloud conditions are suitable the scope of the apparatus is limited, at least for advertising purposes. Whether the same limitation applies to the use of this searchlight for detecting night bombers should be easily ascertained by experiment. When there are clouds, bombers prefer to fly above them. But no device which promises to reduce the risk of air attack should be overlooked, and so we rejoice that this invention will be developed in Great Britain.



# The A.W. XV Monoplane

*Designed specifically for the African Section of the London-Capetown Air Route, the Armstrong Whitworth A.W. XV is a Cantilever Monoplane fitted with four Armstrong Siddeley "Double Mongoose" Engines of 340 h.p. each. The first of the eight machines being built, the "Atalanta," was illustrated in FLIGHT last week. The Machines are designed to be, as far as humanly possible, immune from hurried forced landings, and to have a good Performance in the rarefied Air of certain Sections of the African Route*

**N**OT for very many years has there been produced a commercial aircraft with so many interesting features as those one finds on inspecting the new A.W. XV monoplanes which are now passing through the Armstrong-Whitworth shops at Whitley, Coventry. Eight of these machines are on order for Imperial Airways, Ltd., and the first, the "Atalanta," is already flying, and visited the S.B.A.C. Display at Hendon last week, where it attracted unusual attention. The others are well on the way, and for once it looks as if the old saying that no new aircraft type, let alone a batch of large machines, is ever produced on time, will prove false. The "Atalanta" has done a deal of flying, and such minor "teething troubles," as any new type is likely to suffer from, have already been discovered, and, as far as can be ascertained, remedied. It is true, of course, that only in actual service over the route for which it was designed can it be settled quite definitely whether or not a new commercial aircraft type is entirely successful, but the few difficulties encountered have been tackled and overcome, and the first machine is now reported to be ready for its final, searching tests.

The photographs and general arrangement drawings of the "Atalanta" illustrate very well the general appearance of the machine. What they do not show, however, is the internal structure, which is, if anything, even more interesting than the external appearance. In the space available it is quite impossible to do justice to a new type like the "Atalanta" in one issue of FLIGHT, and we, therefore, propose to divide our description into two instalments, the first, published this week, dealing with the general, or aerodynamic, design of the A.W. XV, and the second instalment, which we hope to publish next week, being devoted to the structural details.

For a good many years the British aircraft designer has been content to follow a conservative policy in the general lay-out of his machines. The biplane type had the advantage of low structure weight, and for a very long time the British aircraft designer refused to be influenced by the vogue of the monoplane type abroad. Nor was he altogether to be blamed for this attitude. The biplane type of structure was known to be lighter, in machines of the same landing speed, than that of the monoplane, particularly the cantilever monoplane. And as it has been a guiding principle in British commercial aviation for many

years not to sanction very high landing speeds, a very good case could actually be made out for the biplane.

Progress in aero-engine design and construction during the last years has been such that a complete breakdown of an engine is now a very rare occurrence. By adopting, as the designers of the A.W. XV have done, a four-engined arrangement of the power plant, the chances of what may be termed a hurried forced landing, as distinct from a more leisurely precautionary landing on a selected site, have become still more remote. This means that a somewhat higher landing speed than hitherto adopted can be tolerated. Once that point is conceded, the relative merits of biplane and monoplane have to be reconsidered. For the same landing speed, the monoplane will be a larger machine, larger, that is, in wing span and probably overall length. While the landing speed was low, *i.e.*, while the wing loading was low, the monoplane size as compared with the biplane, was rather prohibitive. As the wing loading is increased in conformity with the higher permissible landing speed, the difference in size becomes less, and a point is reached when it is no longer safe to say that the biplane is, on balance, the "better" type.

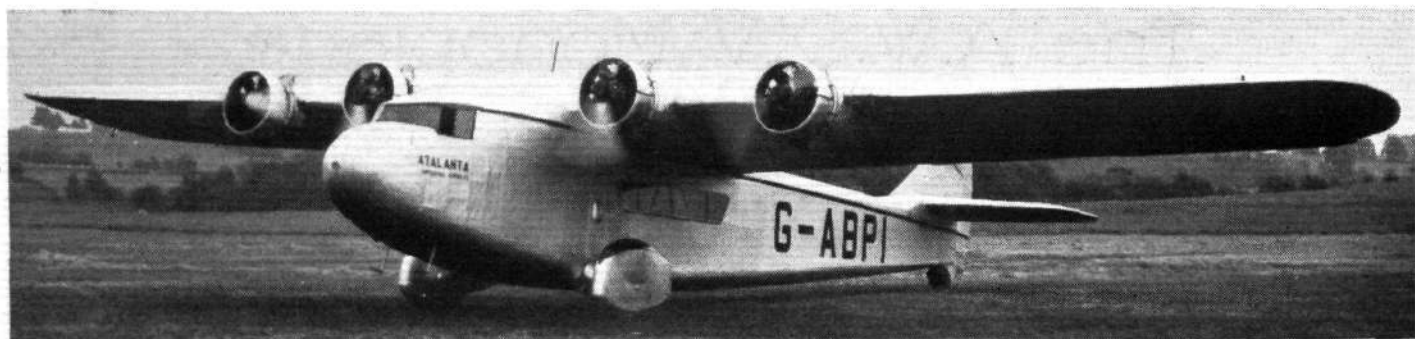
In the A.W. XV we have an aircraft designed for a good deal higher performance than we have hitherto been accustomed to in British commercial aeroplanes. Exact performance figures are not yet available, but the cruising speed will probably be somewhere in the neighbourhood of 120 m.p.h. The higher performance, and the increased landing speed made permissible by a reliable power plant divided into four units, has been made the basis of a very exhaustive study by the Armstrong Whitworth engineers into the subject—biplane or monoplane? They came to the conclusion that, for the purpose in view, the monoplane offered the better solution, and the A.W. XV is their interpretation of that solution.

We recently had the pleasure of being shown the monoplanes in various stages of completion at the works at Whitley, and of having their "points" explained to us by no less authorities than Maj. Green, the firm's chief engineer, and Mr. Lloyd, Armstrong-Whitworth's chief designer. If, therefore, we fail to do justice to the new machines, the fault will be entirely our own.

Extremely careful streamlining is the main feature that impresses one when first confronted by the "Atalanta."



THE A.W. XV IN THE AIR : This front view indicates the very low frontal area of the machine. (FLIGHT Photo.)

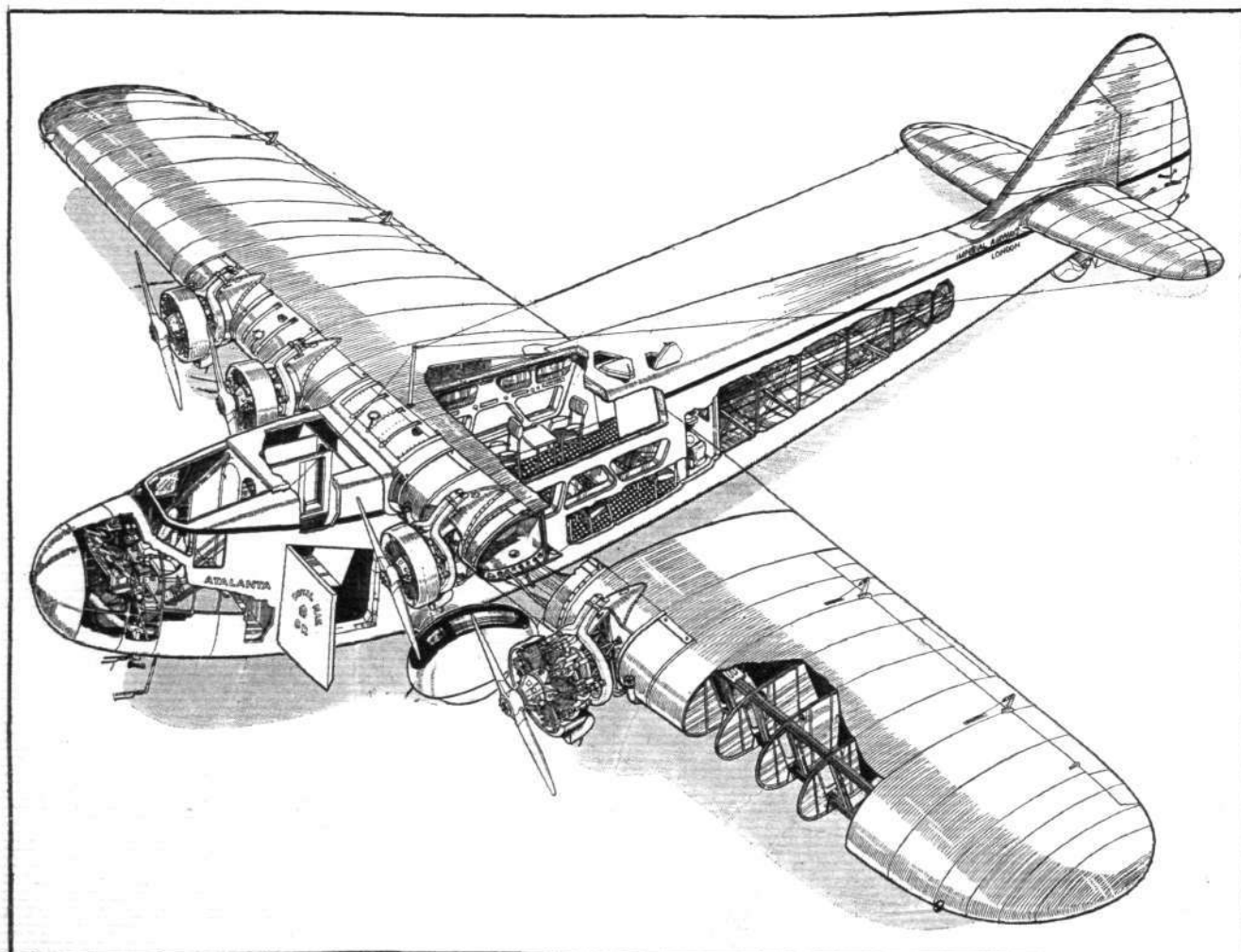


**RUNNING UP :** Mr. Campbell-Orde testing his "Double Mongoose" engines before making a flight at Whitley.  
(FLIGHT Photo.)

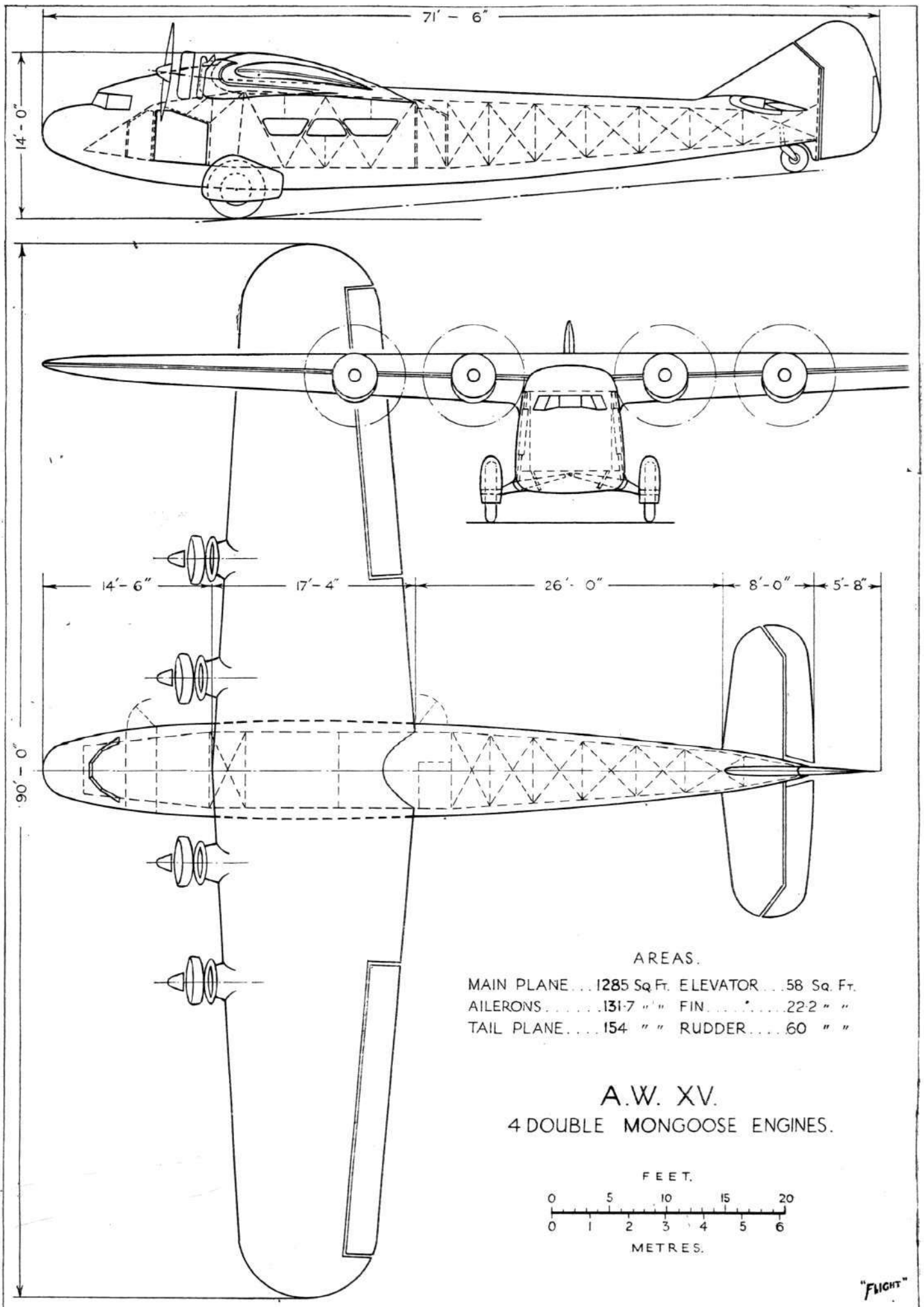
The designers started by selecting the cantilever monoplane type of wing arrangement. They then decided to place the four engines in the leading edge of the wing, and to fair them into the wing surface with as gradual a change of section as possible. The fairings extend, in fact, very much farther aft on the wing surfaces than we recollect ever having seen before, and the result is a very gradual merging of the engine nacelles into the wing covering. The engines themselves have been fitted with drag-reducing rings, so that everything possible has been done to get rid of all avoidable drag. As an instance of the degree to which drag has been reduced, it may be mentioned that "interference drag," which is the term used to express the extra drag which often arises where two components of an aircraft join each other, is nil. In other words, the drag of the whole machine is the sum of the drags of its components, and not, as is very often the case, that sum plus something extra which represents interference. Much work has been done in the Armstrong-Whitworth wind tunnel (which is under the control of Mr. Reynolds) on models of the "Atalanta," and the low drag achieved is largely to be attributed to the wind tunnel work. In fact,

as Air Marshal Sir John Higgins expressed it during our visit to Whitley, the wind tunnel can very quickly pay for itself on a job of this sort.

Having disposed of their four engines in the leading edge of the wing, and having faired them as carefully as might be, the designers set to work on the undercarriage. In the average aeroplane the undercarriage accounts for anything from one-sixth to one-quarter of the total drag of the machine, and yet it is in use for a few minutes only at the beginning and end of each flight. If it could be suppressed altogether it would vastly increase the flying economy of the aircraft. Unfortunately that cannot be done at present. The alternative is to make it disappear into some other part of the aircraft when this is once well in the air. That, however, is accompanied not only by a good deal of weight, but also by considerable extra complication. In the A.W.XV the designers have adopted one of the most ingenious schemes we have seen. More will be said of the undercarriage next week. For the present it will suffice if we state that the whole of the telescopic leg, and two-thirds of the wheel axle, is housed inside the fuselage fairing. To make this possible and still

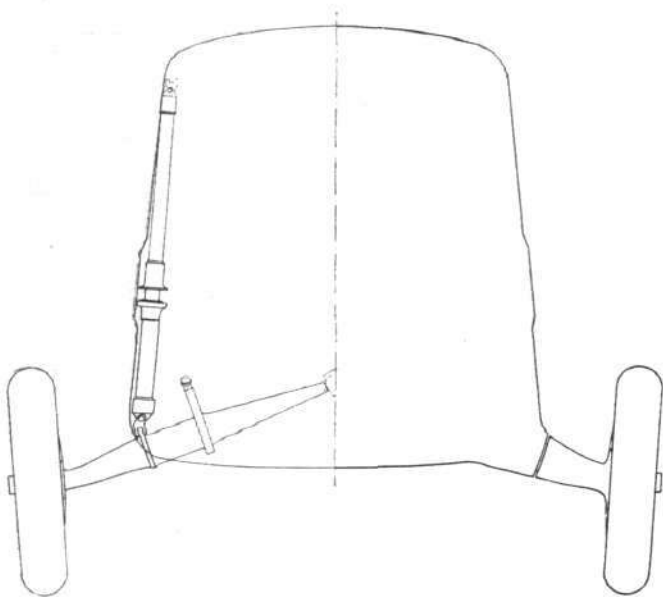


**LAYING BARE THE TRUTH:** A part-sectioned view of the A.W. XV, showing many of the structural and other features.



THE ARMSTRONG WHITWORTH A.W. XV : General arrangement drawings. The four engines are Armstrong-Siddeley "Double Mongoose" of 340 h.p. each.





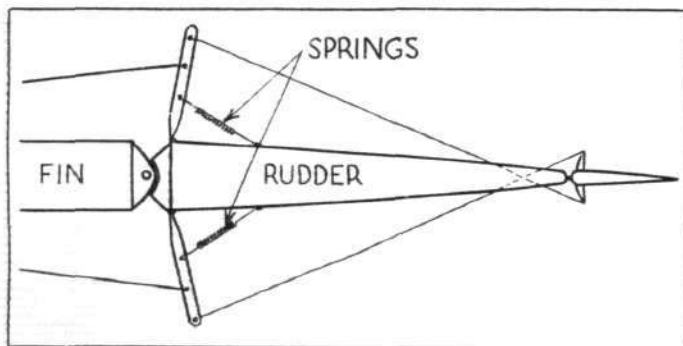
**REDUCING UNDERCARRIAGE DRAG:** Schematic representation of how most of the undercarriage is "buried" inside the fuselage.

retain a reasonably wide-wheel track, the wheel is carried overhung on the axle, the outer portion of which is working as a cantilever beam of some 2 ft. in length. Such an arrangement demands an axle of rather unusual construction, and in the A.W.XV the axles are very substantial members, in the form of double cones.

On the fuselage corner is a fairing root, inside which the axle moves. On the axle is a corresponding fairing, secured to and moving with the axle. When the machine is standing on the ground, and the weight is on the wheels, the fuselage fairing root and the axle fairing are displaced relative to one another, so that there is a break in the fairing. As soon as the machine is in the air, however, and the load is off the wheels, the wheels and their axle fairings sink to the level of the root on the fuselage, and the whole thing is perfectly streamlined. The wheels themselves are partly enclosed in large streamline "spats," so that the total drag of the undercarriage should be very small indeed.

The fuselage itself, although flat-sided, is of very good form and should have a low drag. The wing, which is in three sections, rests on top of the fuselage, and here, again, care has been taken to merge its top surface into the roof of the fuselage.

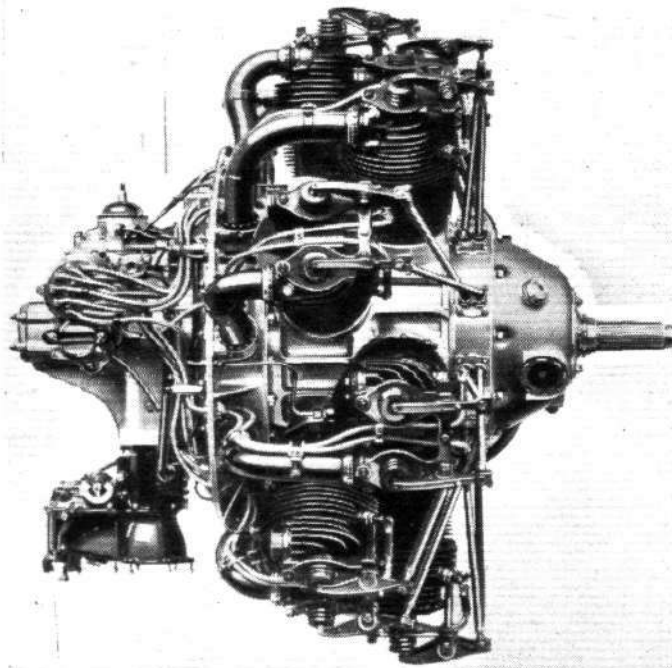
Control surfaces of orthodox design are employed, Bristol-Frise balances being used on the ailerons, horn balances on elevator and rudder. In addition to its horn balance, the rudder is provided with a servo rudder, which forms the trailing edge of the main rudder instead of being carried on outriggers away from the rudder. The arrangement of the servo rudder is unusual and interesting. When the "Atalanta" was first flown, it was discovered that for small angles of rudder movement the servo rudder gave too much control. The effect of this was that when the machine was flown "feet off" it had a tendency to yaw slightly, first to one side and then to the other. The manner in which Mr. Lloyd overcame the difficulty is highly ingenious.



**THE SERVO RUDDER ARRANGEMENT:** For small angles the rudder is operated direct. For larger angles the Servo rudder comes into action.

Our readers will probably be aware that the object of a servo rudder is to relieve the load on the pilot's rudder pedals. In large machines the "weight" of the rudder can become quite considerable, and for long flights would soon tire the pilot, even were he able to put the rudder over to its full extent for short periods. The servo rudder is an auxiliary surface, placed either on outriggers behind the main rudder, or hinged, as in this case, to the trailing edge of the rudder itself. The servo rudder moves in opposite sense to the main rudder, *i.e.*, when it is desired to set the main rudder over to the left for a left-hand turn, the servo rudder is moved to the right. The small force on the servo rudder acts on a long "lever arm," owing to its distance from the main hinge, and thus has the power to overcome the main rudder, which, although its area is much greater, acts on a much shorter "lever arm."

In the "Atalanta," the device adopted so successfully for overcoming the "over-ruddering" at small angles is as follows:—The control wires from the rudder cranks (which are hinged to the rudder and not rigidly attached to it as in direct-operated rudders) to the servo rudder cranks are left just a little slack. Springs are inserted in the wires from the rudder cranks to the main rudder. For small angles of rudder movement, while the load on the main rudder is small, the springs are not extended,



**THE ARMSTRONG-SIDDELEY "DOUBLE MON-GOOSE":** At a normal speed of 2,000 r.p.m. it develops 340 h.p. at 4,000 ft. altitude. Max. power is 375 h.p. at 2,200 r.p.m.

and the rudder is, in fact, operated direct. When the rudder angle increases to such an extent that the load on the rudder is sufficient to stretch the springs, the slack in the servo rudder wires is taken up and the servo rudder comes into operation. From then until the maximum rudder angle is reached, the operation is *via* the servo rudder.

Further to smooth the rudder action and also to enable the machine to be flown without undue fatigue when one engine stops, a friction device is incorporated in the pilot's foot bar. The friction of this is adjustable, and can be set to be just sufficient to hold the rudder over against any engine combination.

The internal accommodation of the "Atalanta" has been designed with a view to dividing the pay load approximately evenly between passengers and mails. For the African service there will be seating accommodation for nine passengers only, but the mail compartment, which is under and behind the pilot's cockpit, is large enough to accommodate something like a ton of mails.

The cockpit is one of the roomiest we have ever seen in any heavier-than-air machine, and the view, due to the position of the cockpit in the extreme nose of the fuselage,



SIDE VIEW OF THE "ATALANTA": Note the "spats" over the wheels, and the low ground clearance. (FLIGHT Photo.)

and the absence of a central engine, is quite remarkably good. Right across the front of the cabin, in front of the pilots, is a large instrument board with a wonderful array of instruments. Those which require constant observation are placed at the port end of the instrument board, under the eyes of the chief pilot, while those which need less frequent reading are placed on the right, in front of the second pilot.

The ailerons are operated by "kidney-shaped" wheels to give an unhindered view over the wheels, and the brake lever which operates the wheel brakes is placed centrally, within reach from both seats. Sideways movement of the brake lever applies the wheel brakes differentially.

The four main throttle levers are placed centrally, also within reach of both pilots, while on the left side of the left seat are the four cocks which turn on and off the petrol at the carburettors. The cocks for turning the petrol on and off at the tanks are on the rear wall of the gangway over the mail compartment.

The wireless operator occupies the space in the cockpit just behind the pilots.

Two airspeed indicators are fitted, the pitot tubes being mounted side by side under the belly of the front portion

of the fuselage. One would imagine that this position might be somewhat exposed, when the machine is being taxied on rough ground, or in long grass.

Another mild criticism which occurs to us is the low clearance between the belly of the fuselage and the ground.

The four "Double Mongoose" engines are, as already mentioned, mounted on the leading edge of the wings. They are spaced fairly widely apart, so that, should it at any time be decided to fit geared engines requiring larger airscrews, the space to do so is available. The petrol tanks are two in number, and are placed inside the leading edge of the wing. One tank is placed between the two engines which normally it supplies. The two systems are, however, connected together so that all four engines can be fed from either of the two tanks, which, by the way, are fitted with electric gauges for indicating the contents.

The oil tanks are shaped to the form of the wing leading edge, and act at the same time as oil coolers. Hot oil crosses the tanks in pipes in which are drilled small holes, so that the hot oil is squirted in fine jets against the inside walls of the tanks and there cooled before being allowed to drain down into the bottom of the tanks.

(To be concluded.)

## THE MICHELIN CUP

A RECORD time was accomplished by Marcel Haeglen, Chief Pilot of the Soc. Générale Aéronautique, when competing recently for the 1932 Michelin Cup. Flying a Hanriot 41 low-wing monoplane, equipped with a 230-h.p. Lorraine air-cooled radial engine, he took off from Toulouse on the morning of June 23, and, covering the regulation circuit of 2,632 km. (1,635 miles), he landed again at Toulouse after an elapsed time of 10 hr. 20 min. He thus maintained an average speed of 255 k.p.h. (158.5 m.p.h.).

The circuit lay over the following towns, at each of which he landed for sufficient time to have his log-book checked by the officials, and, also, at two, to refuel:—Pau, Bordeaux, Angers, Avor (refuel), Tours, Paris, Reims, Nancy, Luxeuil, Dijon (refuel), Clermont Ferrand, Lyons, Montpellier and Perpignan. Allowing an average of two minutes for each stop, it can be assumed that his actual speed was over 161.5 m.p.h. (260 k.p.h.).

Haeglen, it may be remembered, won last year's Michelin Cup on a similar machine—this year's model being specially cleaned up and equipped with "spats." Previous winners were:—1929, Michel Detroyat, on a Morane-Saulnier 230 (230-h.p. Salmson), with 190 k.p.h. (118 m.p.h.). 1930, Detroyat, on a similar machine, with 199 k.p.h. (123.6 m.p.h.).

This Michelin Cup was offered in 1928 by the Michelin Co. to be competed for annually, during a period of four



THE MICHELIN CUP WINNER: The Hanriot 41 Monoplane (230-h.p. Lorraine air-cooled radial).

years, by single-seater machines equipped with engines not exceeding 230 h.p., and to be flown over a circuit in France between July 1 and June 30 of each year. It was open to international entries.

A sum of 120,000 francs was also donated by the Michelin Co., 30,000 of which to be awarded annually to the winners of the Cup during the 4-year period. A minimum average speed of 185 k.m./hr. (115 m.p.h.) must be maintained over the circuit, including the landings at the airports of the fifteen cities comprising the tour, where the contestant is required to have his log-book signed by the local commissaire. Intermediate landings, refuelling and repairs are authorised.

R. C. W.

# VISIT OF THE "GRAF ZEPPELIN" TO ENGLAND

ONCE more the German airship *Graf Zeppelin* has paid a most successful visit to England. Last Saturday morning the airship left her base at Friedrichshafen and arrived over Hanworth Air Park at 6 p.m., several English people being among her passengers. After circling the aerodrome the airship made off in the direction of Brooklands, where it was the intention to pay a salute to the Duke and Duchess of York. Later the airship returned to Hanworth and was moored in a very short time indeed.

When the *Graf Zeppelin* first arrived over Hanworth it was accompanied by the huge Junkers "G.38," which has now been given the registration number D.2500 instead of the D.2000 which was the number of the first version of the machine. Incidentally, the "G.38" is something of a tragedy. She was built some years ago as the nearest practical approach to Dr. Junkers' ideal "all-wing" aeroplane. It was found, however, that her passenger accommodation was not very practical, and a second "storey" was added to her fuselage. The passenger accommodation is now much improved, but the machine is as far removed from the "all-wing" ideal as any other aeroplane.

The manner in which Dr. Eckener and his officers and crew brought the airship into Hanworth caused the greatest admiration among those who know what airship handling means. No uncertainty, no hesitation, no mistake, however slight. With nose slightly down, the huge mass approached the ground, the bridles in the extreme nose were dropped and caught by some of the 200 or so Middlesex Rover Scouts, who, under the direction of Capt. Meager, formed the landing party. Next the side guy ropes were dropped and secured, and the nose of the airship was moored. Next the stern was dropped (by valving gas from the rear gasbags, one assumes) until the buffer on the rear engine car was in contact with the ground. The rest of the Scouts caught hold of the handrails on the cars, and the disembarkation of the passengers began.

After a short stay to change passengers, the airship left Hanworth for a cruise around England, paying first a visit

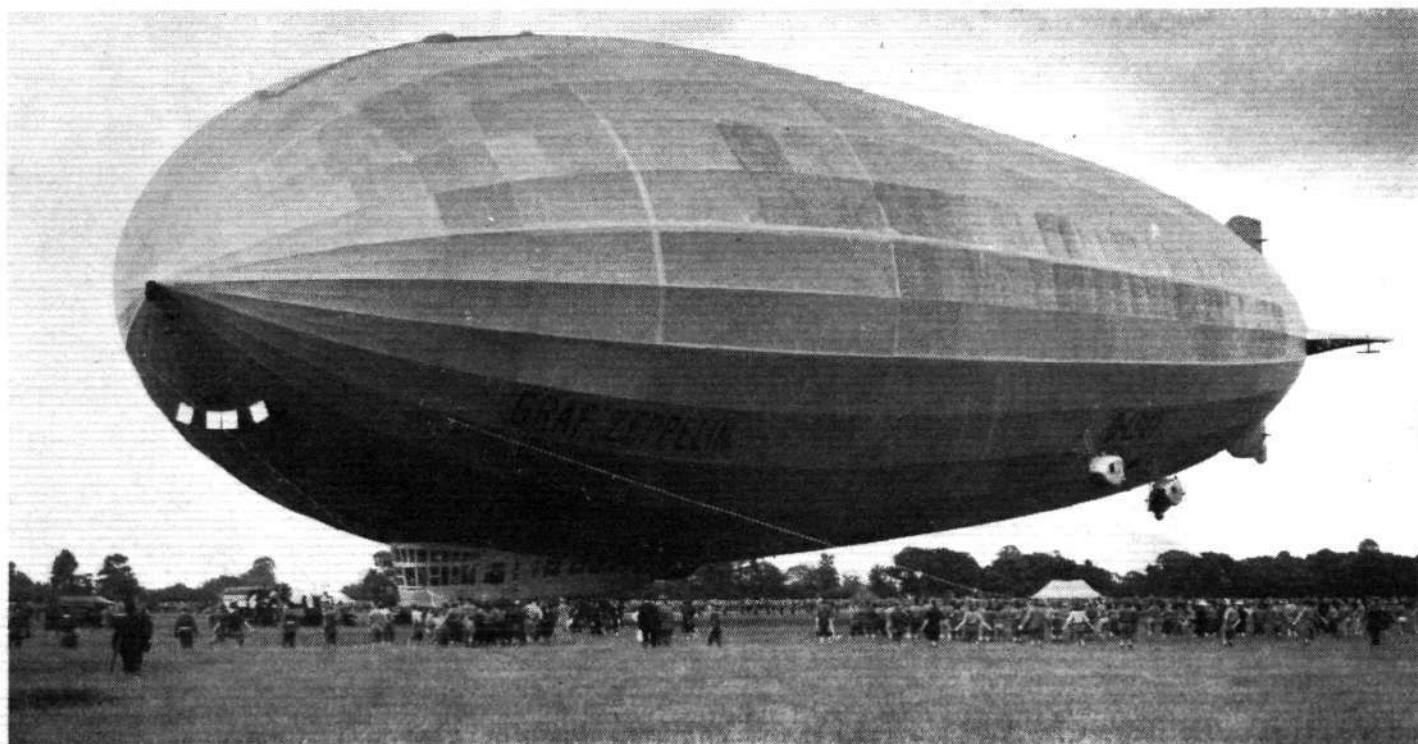


THE ESCORT : The Junkers G.38, with more powerful engines and a "storey" added to her fuselage, accompanied the "Graf Zeppelin." (FLIGHT Photo.)

to the newly-opened Municipal aerodrome at Portsmouth, then returning towards London and, following the East Coast, making for Scotland. Edinburgh was reached in the early morning of Sunday, July 3, and the return flight to Hanworth was *via* Glasgow, Liverpool, Birmingham, Gloucester, Bristol, Cardiff, Weston-super-Mare.

The *Graf Zeppelin* had made a tour of Great Britain in about 24 hours, and her passengers had greatly enjoyed the flight. After alighting at Hanworth, a number of passengers were taken on board for a short flight around London, and when they had been discharged the airship took on board her German passengers and set off for home. Friedrichshafen was reached safely and the airship put into her hangar.

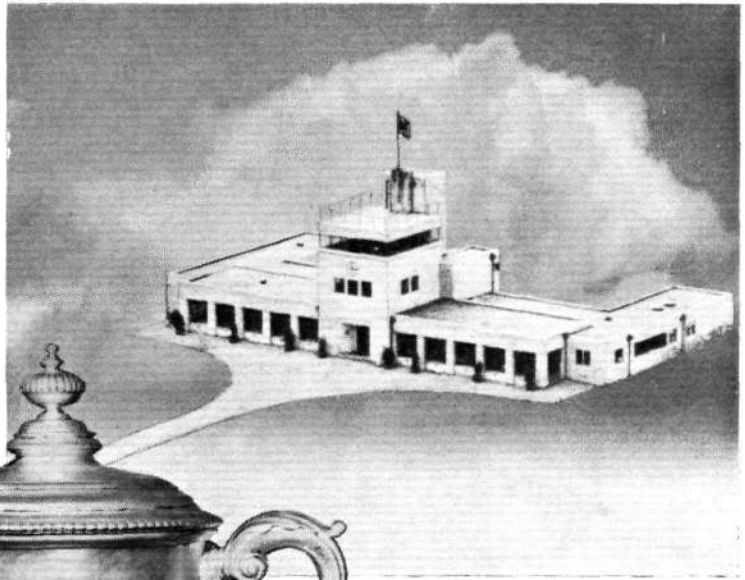
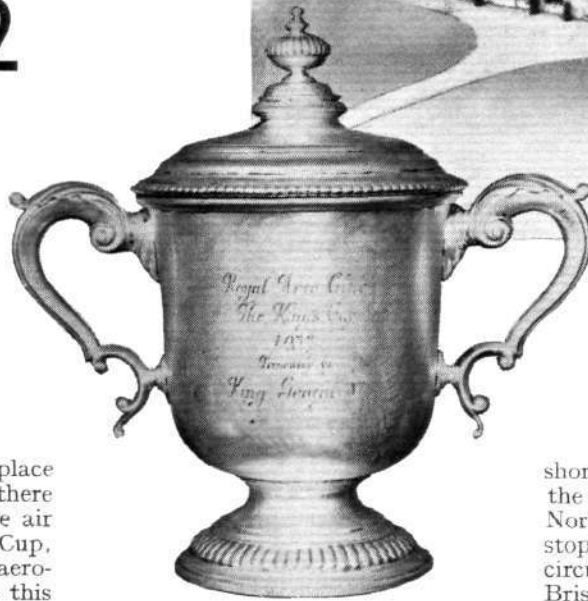
Dr. Eckener was full of praise for the way in which the Scouts did their work at Hanworth, and invited three to make the flight to Germany. One accepted the invitation, Mr. Roberts, the Secretary, and was on board the airship on her flight home to Germany. At Hanworth thousands of spectators saw the airship on both days, and the huge crowds behaved admirably, refraining from breaking out of the enclosures until the airship was safely moored.



THE BOWS SECURED : The "Graf Zeppelin" during mooring operations at Hanworth. (FLIGHT Photo.)



# KING'S CUP RACE, 1932



**U**NLESS scratchings take place at the eleventh hour, there will be 46 starters in the air race for the King's Cup, which starts from Brooklands aerodrome to-day, July 8. The race this year is flown on two days, the competitors returning to Brooklands at the end of each circuit.

## The Course

The course is indicated on our sketch maps, from which it will be seen that on the first day (Friday) the machines will start from Brooklands and fly *via* Abingdon, Shoreham and Portsmouth to Bristol (Whitchurch aerodrome). At Bristol there is a compulsory stop of 40 min., and competitors then continue to Leicester (Ratcliffe aerodrome), *via* Birmingham (Castle Bromwich), Hooton and Manchester (Woodford). Again there is a 40 min. compulsory stop at Leicester before the last stage of the first day's race is flown. This is back to Brooklands, *via* Ipswich (Municipal aerodrome) and Northampton (Sywell aerodrome). The only controls are Bristol and Leicester, the other aerodromes being merely turning points, where the machines do not alight.

On the second day the course to be flown is a much

shorter one. After leaving Brooklands the competitors fly *via* Bristol and Northampton back to Brooklands, where a stop of one hour is made. The last circuit is *via* Shoreham, Portsmouth and Bristol, where the finish takes place. On the second day Brooklands is the only control, Bristol, Northampton, Shoreham and Portsmouth being turning points only.

The length of the first day's circuit is approximately 728 miles, while the two circuits to be flown on the second day (Saturday) total only 495 miles. The total length of the King's Cup course is 1,223 miles.

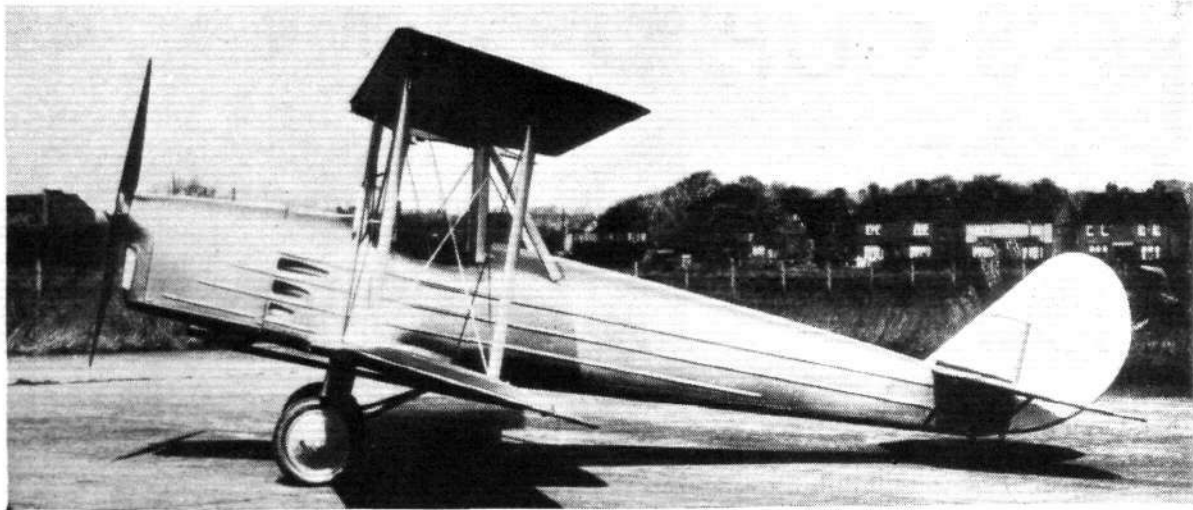
It is a condition of this year's King's Cup Race that no machine will be handicapped at less than 110 m.p.h. One result of this is that the race will not be quite as protracted as has been the case in certain previous races for the King's Cup.

On the first day the limit man will be started from Brooklands at 8 a.m., while on the second day, owing to the shorter route to be flown, the start of the first man is timed for 11.30 a.m.

In order to assist our readers we have included on our sketch map the approximate times when the limit man may be expected to arrive at the various turning points and controls. It will be obvious that these times can be



THE ARROW "ACTIVE II" (GIPSY III) : A development of the "Active I," this machine is, apart from its clean design, remarkable for its fine construction.



THE BLACKBURN "B2 TRAINER" (GIPSY III) : Differing from the "Bluebird" in its all-metal fuselage, the "B2" shows other improvements on the older type.

only approximate. The strength and direction of the wind on the days of the race may affect these times very considerably. We might add that the times have been based on a speed of about 110 m.p.h., which has been assumed to be the approximate speed of the limit machines.

On the first day of the race the limit man will, as already mentioned, be started at 8 a.m. The scratch man is due to leave at about 11.17, and the limit man is due back at Brooklands at approximately 4 in the afternoon. On the second day the limit machine starts at 11.30, and the scratch machine (the Avro "Mailplane") will be off at approximately 1.15 p.m. The finish at Brooklands is expected to take place at about 5 p.m.

The Handicap Allowances

In the table on page 627 we give a complete list of the starters and their handicap allowances. It will be noted that A. V. Roe & Co., Ltd., are the "alpha and omega" of the race, in that they have the limit and scratch

machines. The 44 machines in between these two extremes cover a great variety of types, but unfortunately include but few new aircraft.

It will be noted from the table that the first 7 machines have received the same handicap allowance. Actually they *should* all start together, but in the interest of safety a small interval will be used between certain of these machines, some of which will start  $\frac{1}{2}$  a min., 1 min. and  $1\frac{1}{2}$  min. late. The necessary adjustment will be made later. It will probably be something of a surprise to many to discover that the De Havilland "Fox Moth" to be flown by Capt. Hope starts level with the other six "limit men." This machine has been fitted with the new De Havilland "Gipsy III A" engine, which develops considerably more power than the "Gipsy III," and Hope should have a good chance in the race. Here it might be mentioned that there is a possibility that some of the handicap allowances may be altered at the last minute, when the handicappers have had an opportunity to examine all the machines closely. We cannot, therefore, promise that the handicaps in our table will in all instances be final. They are, however, the latest official figures available up to the time of going to press.

As we are not in the confidence of the official handicappers, at least not to the extent of knowing on what basis the machines in the King's Cup Race have been handicapped, we cannot give official figures. It is, however, possible to obtain an approximate idea of the speeds



THE KING'S CUP RACE : Sketch map of the route. Friday's route is shown on the left, Saturday's on the right. The approximate times when the first machines will arrive at controls and turning points are indicated. (FLIGHT Map.)

## HANDICAP ALLOWANCES AND STARTING TIMES IN KING'S CUP RACE

Racing No.	Registration Mark.	Entrant	Pilot	Aircraft.	Engine	Section I		Section II
						Handicap	Starting Time	Handicap
1	ABPU	J. F. Legard .. .. .	J. F. Legard .. .. .	Avro Avian IIIA ..	Genet II ..	h. m. s. 2 36 36	h. m. s. 8 00 00	h. m. s. 1 44 57
2	AATL	G. H. Keat .. .. .	G. H. Keat .. .. .	Avro Avian 4M ..	Hermes II ..	2 36 36	8 00 00	1 44 57
3	ABUW	R. Blackburn .. .. .	F/O. J. W. Gillan ..	Blackburn B.2 ..	Gipsy III ..	2 36 36	8 00 30*	1 44 57
4	ABOA	W. H. Rhodes-Moorhouse ..	W. H. Rhodes-Moorhouse ..	D.H. Moth ..	Gipsy II ..	2 36 36	8 00 30*	1 44 57
5	ABTR	Lt.-Col. L. A. Strange ..	S. A. Thorn .. .. .	Spartan 3-str., Mk. II	Hermes IIB ..	2 36 36	8 01 00**	1 44 57
6	AAYL	Miss W. E. Spooner ..	Miss W. E. Spooner ..	D.H. Moth ..	Gipsy I ..	2 36 36	8 01 00**	1 44 57
7	ABUT	A. E. Hagg .. .. .	W. L. Hope .. .. .	D.H. Fox Moth ..	Gipsy IIIA ..	2 36 36	8 01 30***	1 44 57
8	ABIB	J. G. Ormston .. .. .	J. G. Ormston .. .. .	Avro Sports Avian	Hermes II ..	2 32 58	8 03 38	1 42 30
9	ABWI	R. McAlpine .. .. .	T. N. Stack .. .. .	Blackburn B.2 ..	Gipsy III ..	2 29 25	8 07 11	1 40 08
10	AAJP	J. Grierson .. .. .	J. Grierson .. .. .	D.H. Moth ..	Gipsy I ..	2 29 25	8 07 11	1 40 08
11	ABDN	Lt. C. R. V. Pugh, R.N. ..	Lt. C. R. V. Pugh, R.N. ..	Avro Sports Avian	Hermes II ..	2 22 28	8 14 08	1 35 29
12	ABJL	Hon. R. Westenra .. ..	Hon. R. Westenra .. ..	D.H. Moth ..	Gipsy II ..	2 22 28	8 14 08	1 35 29
14	AAAC	G. Kenning .. .. .	R. T. M. Clayton ..	Blackburn Bluebird IV	Hermes II ..	2 22 28	8 14 38*	1 35 29
15	AAHP	Sqd.-Ldr. J. McKelvie ..	Lord M. A. Douglas-Hamilton	D.H. Moth ..	Gipsy I ..	2 20 46	8 15 50	1 34 20
16	ABED	Miss W. Brown .. .. .	Miss W. Brown .. .. .	Avro Sports Avian	Hermes II ..	2 15 46	8 20 50	1 30 59
17	AALL	Air Com. F. E. Guest ..	Air Com. F. E. Guest ..	Hawker Tomtit ..	Mongoose IIIC	2 09 18	8 27 18	1 26 39
18	AAYZ	F/O. E. C. T. Edwards ..	P/O. H. R. A. Edwards ..	Martlet .. .. .	Gipsy I ..	2 06 09	8 30 27	1 24 32
21	ABJR	H. C. Mayers .. .. .	H. C. Mayers .. .. .	Comper Swift ..	Pobjoy " R " ..	1 59 59	8 36 37	1 20 25
23	ABUU	M. A. Lacayo .. .. .	M. A. Lacayo .. .. .	Comper Swift ..	Pobjoy " R " ..	1 59 59	8 37 07*	1 20 25
24	ABTC	Capt. I. C. Maxwell ..	G. E. Lowdell .. .. .	Comper Swift ..	Pobjoy " R " ..	1 59 59	8 37 07*	1 20 25
25	ABVU	A/M. Sir J. F. A. Higgins ..	Sqd.-Ldr. J. W. Woodhouse ..	Avro Cadet ..	Genet Major ..	1 59 59	8 37 37**	1 20 25
26	ABII	H. Wilcox .. .. .	Sqd.-Ldr. W. Helmore ..	Hawker Tomtit ..	Mongoose IIIC	1 59 59	8 37 37**	1 20 25
27	ABLG	W. L. Runciman .. ..	W. L. Runciman .. ..	D.H. Puss Moth ..	Gipsy III ..	1 58 29	8 38 07	1 19 24
28	AAVA	K. C. Gandar Dower ..	A. C. S. Irwin .. .. .	D.H. Puss Moth ..	Gipsy III ..	1 58 29	8 38 07	1 19 24
29	AAVD	W. L. Hope .. .. .	Capt. G. Birkett .. ..	D.H. Puss Moth ..	Gipsy III ..	1 58 29	9 18 07	1 19 24
30	ABLS	E. L. Gandar Dower ..	C. L. Pashley .. .. .	D.H. Puss Moth ..	Gipsy III ..	1 58 29	9 18 07	1 19 24
31	ABGT	Capt. G. de Havilland ..	G. R. de Havilland ..	D.H. Puss Moth ..	Gipsy III ..	1 58 29	9 18 37*	1 19 24
32	ABGX	Mrs. A. S. Butler .. ..	Flt. Lt. H. M. Mellor ..	D.H. Puss Moth ..	Gipsy III ..	1 58 29	9 18 37*	1 19 24
33	AAZD	P. de W. Avery .. .. .	P. de W. Avery .. .. .	Comper Swift ..	Pobjoy " R " ..	1 56 59	9 19 37	1 18 24
34	ABUA	Miss F. J. Crossley ..	Miss F. J. Crossley ..	Comper Swift ..	Pobjoy " R " ..	1 56 59	9 19 37	1 18 24
36	AAVB	Lt. Com. G. Rodd, R.N. ..	Lt. Com. G. Rodd, R.N. ..	D.H. Puss Moth ..	Gipsy III ..	1 56 59	9 20 07*	1 18 24
37	AAVW	Lt. C. John, R.N. ..	Lt. C. John, R.N. ..	Avian Monoplane	Hermes II ..	1 54 02	9 22 34	1 16 25
38	ABDF	E. W. Hart .. .. .	Flt. Lt. A. P. K. Hattersley	D.H. Puss Moth ..	Gipsy III ..	1 54 02	9 22 34	1 16 25
39	ABVW	Lord Wakefield of Hythe	Capt. H. S. Broad ..	D.H. Moth ..	Gipsy IIIA ..	1 51 07	9 25 29	1 14 29
40	AAZC	F. R. Walker .. .. .	F. R. Walker .. .. .	Comper Swift ..	Pobjoy " R " ..	1 48 17	9 28 19	1 12 34
41	AAXM	W. L. Everard .. .. .	Flt. Lt. W. E. P. Johnson ..	D.H. Puss Moth ..	Gipsy III ..	1 48 17	9 28 19	1 12 34
42	AAZF	Capt. G. Fane .. .. .	Wing Com. J. M. Robb ..	Comper Swift ..	Pobjoy " R " ..	1 42 42	9 33 54	1 08 49
43	ABLI	Capt. H. H. Balfour ..	Lt.-Col. L. A. Strange ..	Spartan Mailplane	3 Gipsy III ..	1 42 42	9 33 54	1 08 49
44	ABME	A. J. A. Wallace Barr ..	Flt. Lt. E. A. Healy ..	Avro Avian IVM	Genet Major ..	1 38 37	9 37 59	1 06 06
46	ABIX	A. C. Thornton .. .. .	F/O. E. C. T. Edwards ..	Arrow Active ..	Hermes IIB ..	1 34 39	9 41 57	1 03 26
48	ABVE	A. C. Thornton .. .. .	F/O. H. H. Leech .. ..	Arrow Active II ..	Gipsy III ..	1 22 02	9 54 34	0 54 58
49	AAXP	G. E. de Lengerke ..	Flt. Lt. J. G. D. Armour ..	Meteor .. .. .	2 Gipsy III ..	1 22 02	9 54 34	0 54 58
50	ABUR	Lt. Com. E. W. B. Leake ..	E. W. Percival .. .. .	Percival " Gull " ..	Hermes IV ..	1 19 37	9 56 59	0 53 21
51	ABWH	I. C. MacGilchrist ..	A. J. Styran .. .. .	Comper Swift ..	Gipsy III ..	1 10 19	10 6 17	0 47 07
52	ABWW	H.R.H. Prince of Wales ..	Flt. Lt. E. H. Fielden ..	Comper Swift ..	Gipsy III ..	1 10 19	10 6 17	0 47 07
53	ABJM	Sir J. D. Siddeley ..	H. A. Brown .. .. .	Avro " Mailplane " ..	Panther IIA ..	Scratch	11 16 36	Scratch

NOTE.—In the interests of safety a gap of 40 minutes will be introduced in Section I between the starting times of Competitors Nos. 28 and 29. All Competitors from No. 29 onwards, therefore, will be starting 40 minutes later than their true handicap allowances.

\* To avoid overcrowding on the starting line at Brooklands in Section I, the starting times of certain competitors (marked by an asterisk in the list) will be delayed by the officials.

Each asterisk denotes a delay of 30 seconds.





**THE PERCIVAL "GULL" (HERMES IV) :** This is a new type, with seating accommodation for pilot and two passengers. (FLIGHT Photo.)

which the various types of machines will have to do. If we assume that the first seven machines are handicapped to do 110 m.p.h. around the course, it is found that, to arrive simultaneously with them at the end of the race, the Avro "Mailplane" will have to do 181 m.p.h. This gives us the two extremes, between which the other machines are grouped, and it is then possible to calculate what speeds the others will have to do.

We have made no attempt at great accuracy, as in any case we are basing our calculations on somewhat doubtful assumptions, but on the basis of 110 m.p.h. for the limit men and 181 m.p.h. for the scratch machine, we arrive at the following figures:—Machines 1-7 inclusive, 110 m.p.h.; Nos. 11, 12 and 14, 114 m.p.h.; Nos. 21-26, 121 m.p.h.; Nos. 27-32, 121.5 m.p.h.; Nos. 33-36, 122 m.p.h.; Nos. 40 and 41, 125 m.p.h.; Nos. 42 and 43, 127 m.p.h.; Nos. 48 and 49, 135 m.p.h.; Nos. 51 and 52, 141 m.p.h., and No. 53 (scratch), 181 m.p.h.

If the handicappers have assumed a higher speed than 110 m.p.h. for the first seven machines, all the other speeds will, of course, have to be proportionately higher.

#### The new Types

It has not been considered necessary to refer in this week's issue to all the aircraft types which are taking part in the King's Cup Race. Most of them are already well known to our readers. A few words about the new types may, however, be of interest.

The Comper "Swift" (Gipsy III), one of which has been entered by H.R.H. the Prince of Wales, has already been

described and illustrated in FLIGHT. It will, however, be making its first public appearance at Brooklands to-day.

The Arrow "Active II" (Gipsy III) is a development of the "Active I" (Hermes II B), and is a very clean-looking design. It is a single-seater suitable for advanced training in aerobatics, etc., and is a biplane with the lower wing of much smaller span and chord than the top, so that it might almost be termed a "sesquiplane." Structurally the "Active II" is a very fine piece of work indeed, and its structure may, without suffering greatly thereby, be compared with that of any service type of aircraft. The machine is being flown by Mr. Leech, and the combination should be a very useful one.

The Percival "Gull" (Hermes IV) is a low-wing cabin monoplane three-seater, fitted with the new "Hermes IV" inverted engine. By using the inverted engine and giving the decking in front of the windscreen a downward slope, the pilot's view has become very good indeed. The machine is very "clean," and should give a good account of itself. This is evidently also the view of the handicappers, who have only given it 2 hr. 13 min. start over the Avro "Mailplane" for the total course of 1,223 miles.

A new combination will be the De Havilland "Moth" to be flown by Capt. Hubert Broad. This machine is a wooden "Moth" fitted with the new De Havilland "Gipsy III A" engine, similar to that fitted in Capt. Hope's "Fox Moth." In general appearance the machine resembles somewhat the "Tiger Moth," but has not the stagger and swept-back wings of that machine.



**FITTED WITH A NEW ENGINE :** The de Havilland "Fox Moth" to be piloted by Capt. Hope has the new "Gipsy IIIA" engine which recently passed its type tests. (FLIGHT Photo.)



# Airport News



## MUNICIPAL ENTERPRISE

Some idea of the size of the Portsmouth Municipal Airport may be gained from this photograph taken after the R.A.F. aircraft had arrived. The visiting civil aircraft—about 70 odd arrived during the afternoon—were parked at the farther end. (FLIGHT Photo.)

## Portsmouth's Airport Opened

PORTSMOUTH'S Municipal Airport, which was fully described in FLIGHT for April 22 of this year, was opened officially with all due ceremony and much flying on Saturday, July 2.

Sir Philip Sassoon, the Under-Secretary of State for Air, flew down to Gosport in the morning, and after being welcomed by the Lord Mayor (Alderman F. G. Foster, J.P.), he attended the official lunch in the Guildhall.

Sir Philip was deputising for Lord Londonderry, who was unable to get away from Geneva, where he is engaged in the Disarmament Conference. At the aerodrome after the lunch he made a short encouraging speech, congratulating the Municipality upon their foresight, before declaring the Airport open. Suiting his actions to his words, he then led a party which included the Lord Mayor, Lady Mayoress and other members of the City Council into an Imperial Airways' "Argosy" for a short flight over the city.

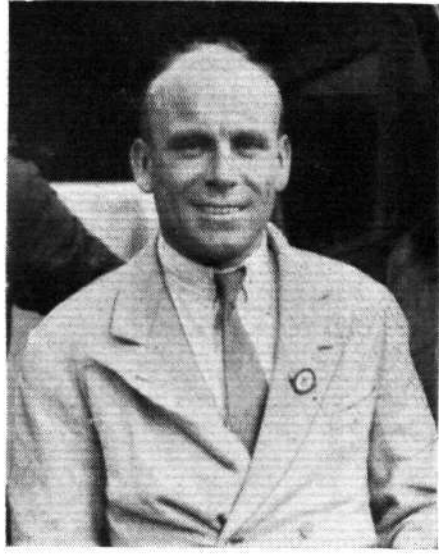
Portsmouth Airport is one which lends itself admirably to a flying meeting, since the landing area is over 250 acres in extent, and moreover, having been prepared by Hunters, of Chester, the surface is as smooth as a billiard table. Having this large area allows the erection of adequate enclosures for the spectators and for their cars; so that on Saturday there must have been between 50,000 and 70,000 people watching the show without any undue crowding whatsoever. The Corporation are to be congratulated on

their foresight in establishing this airport, and particularly so for the manner in which they have done this. For example, they have realised the necessity for providing a landing area, as being of paramount importance, and have therefore secured and prepared this large piece of ground, which incidentally adjoins the waters of Langstone Harbour, which at a future date may well be made into a



## TO VIEW THEIR CITY

The Lord Mayor and Lady Mayoress (Alderman and Mrs. F. G. Foster) about to taste the joys of travelling in an Armstrong Whitworth "Argosy." Air Marshal Sir Geoffrey Salmond is on the Lord Mayor's right. (FLIGHT Photo.)



**THE VICTORS**  
C. S. Napier, who won the Grosvenor Cup on his own Westland "Widgeon" (Gipsy I) G-AADE.

Flt. Lt. W. E. P. Johnson, who won the S.B.A.C. Cup on the London Aeroplane Club's "Moth" (Gipsy I) G-AAJJ.

Flt. Lt. G. Birkett, who won the Portsmouth Challenge Cup Race on Air Taxis' "Monocoupe" (Scarab) G-ABBR. (Flight Photos.)

Place	Entrant.	Pilot	Aircraft and Engine	Start	Finish	Av. Speed
GROSVENOR CUP RACE						
				m. s.	m. s.	m.p.h.
1	C. S. Napier ..	Entrant ..	Widgeon (Gipsy I) ..	5 10	37 20	98
2	London Ae. C. ..	W. E. Johnson ..	Moth (Gipsy I) ..	4 23	37 38	94½
3	L. A. Strange ..	Entrant ..	Arrow (Gipsy II) ..	3 44	37 59	92
4	Mrs. G. Patterson ..	G. Lowdell ..	Moth (Cirrus III) ..	4 42	38 31	93½
5	Redwing Aircraft Co. ..	L. Payne ..	Redwing (Genet II) ..	0 00	39 54	79
6	Lancashire Ae. C. ..	T. Hall ..	Avian (Hermes II) ..	7 34	Retired	
S.B.A.C. TROPHY RACE						
1	London Ae.C. ..	W. E. Johnson ..	Moth (Gipsy I) ..	0 13	22 30	94½
2	L. Lipton ..	Entrant ..	Moth (Gipsy I) ..	0 13	22 45	93½
3	Mrs. G. Patterson ..	Entrant ..	Moth (Cirrus III) ..	0 26	22 50	93½
4	Miss W. Brown ..	Entrant ..	Avian (Cirrus III) ..	0 00	23 11	90½
5	Lancashire Ae.C. ..	T. Hall ..	Avian (Hermes II) ..	2 21	24 06	96½
PORTSMOUTH CHALLENGE CUP RACE						
1	Air Taxis, Ltd. ..	G. Birkett ..	Monocoupe (Scarab) ..	6 28	24 34	116
2	London Ae.C. ..	W. E. Johnson ..	Moth (Gipsy I) ..	3 32	25 00	97½
3	Mrs. G. Patterson ..	G. Lowdell ..	Moth (Cirrus III) ..	3 25	25 02	97½
4	L. A. Strange ..	Entrant ..	Arrow (Gipsy II) ..	2 46	25 07	94
5	L. M. Balfour ..	J. Maslin ..	Moth (Gipsy II) ..	4 19	25 16	100½
6	A. J. A. Barr ..	J. Cantrill ..	Bluebird (Hermes II) ..	4 25	25 39	98½
7	B.A.T., Ltd. ..	L. Anderson ..	Klemm (Hermes IIB) ..	4 02	25 56	96
8	J. V. Holman ..	Entrant ..	Arrow (Hermes II) ..	3 37	26 41	91

in a handicap race open to all types of aircraft. Not one of these races drew more than eight entries, but all were keenly contested, and excellent finishes were ensured by the handicapping of Messrs. Rowarth and Dancy. No doubt the management encountered severe difficulties in choosing the course, but it certainly seemed a little unfortunate that for over three-quarters of the course the machines should have been out of sight. All the races were flown round the same course; that for the Grosvenor Cup being three laps, making a distance of approximately 50 miles, and the other two being two laps. As will be seen from the tabulated results, our old friend Mr. C. S. Napier won the Grosvenor Cup with his "Widgeon" (Gipsy I). We are particularly glad to see this success, as Mr. Napier has consistently flown in races since he obtained his "Widgeon," somewhere about five years ago. So far, however, he has not had the luck which everyone felt he deserved. The winner of the S.B.A.C. Cup was Flt. Lt. W. E. P. Johnson on a "Moth" (Gipsy I), entered by the London Aeroplane Club. Flt. Lt. Johnson did sterling work for the club with this same "Moth," as, apart from winning this cup, he was also second in both the Grosvenor Cup and Portsmouth Challenge Trophy races. This latter was won by Flt. Lt. G. Birkett, of Air Taxis, Ltd., on an American "Monocoupe" (Warner Scarab).

seaplane landing station. Despite this large area, however, they have not squandered their money on inordinately extensive buildings which would not be likely to justify their erection for many years to come. They are for the present contenting themselves with one large hangar which will be used by the Portsmouth, Southsea and Isle of Wight Aviation Co., Ltd., who are running a ferry service between Portsmouth and the Isle of Wight and who are at the same time managing the Portsmouth aerodrome. We might also mention that the Ryde aerodrome of this company has been "Hunterised" and is now fit for use.

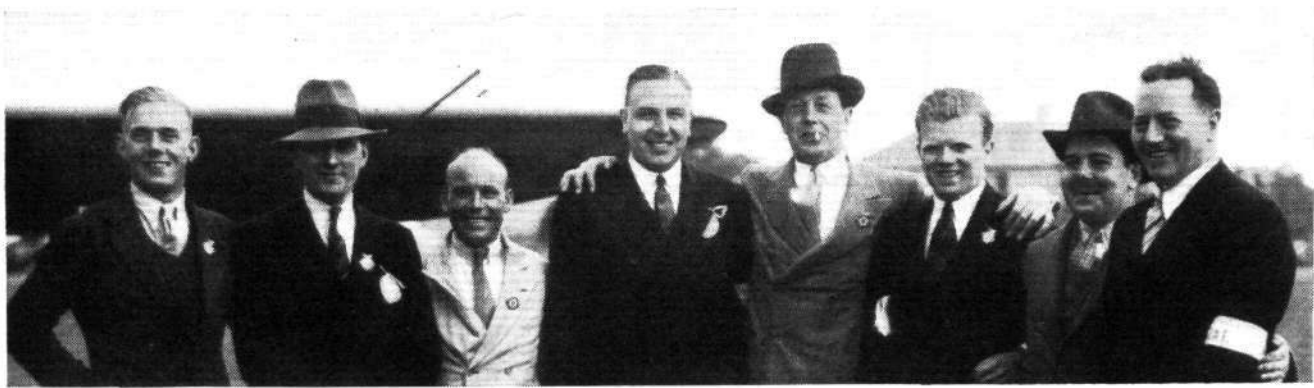
Other buildings at Portsmouth comprise a restaurant and small administrative building combined under one roof, while for the Flying Club which is to be established there, two cottages have been converted and a small hangar built alongside them. Those primarily responsible for all this praiseworthy work, and who have been throughout the, so to speak, driving power of the airport sub-committee are Councillor L. N. Blake (Chairman) and Councillor J. Webb. To the whole of this sub-committee, however, we offer our congratulations on their work.

The programme which had been arranged to coincide with the opening of the Airport was perhaps somewhat long, but it undoubtedly included everything which could possibly interest those who had come to see flying. Both the Grosvenor Challenge Cup and S.B.A.C. Challenge Trophy races had been allotted by the Royal Aero Club to this meeting, while Col. Sir William T. Dupree had also presented a magnificent challenge trophy designated "The Portsmouth Challenge Trophy," to be raced for annually

The programme itself opened with the usual fly-past of aircraft, and this was followed by a demonstration of the A.W. XVI flown by Flt. Lt. D. S. Green. Our readers will know only too well the magnificent performance of which this machine is capable from our account of the S.B.A.C. meeting at Hendon on June 27. The R.A.F. contingent commanded by Grp. Capt. J. E. Baldwin provided the spectacular part of the programme. The Air Council had combined with the management in an unprecedented manner, so that five complete items, as carried out at the Hendon Display on June 25, were allowed to be repeated here.

The first was Squadron Air Drill by No. 43 (Fighter) Squadron from Tangmere, commanded by Sqd. Ldr. R. H. Harmer. The formation flying of this squadron was as perfect as we have now come to expect, and it was generally agreed that both this and the subsequent items were perhaps even more perfectly performed than at Hendon on the previous Saturday. This may have been to some extent due to the lesser degree of officialdom and the lack of restraint consequent on the machines being displayed before a purely civil crowd. The synchronised aerobatics which followed the drill were really wonderful, and both pilots made full use of the marvellous controllability and speed range of their Hawker "Fury" (Kestrel) aircraft. The next event was inverted





OVERFLOWING SPIRITS AT PORTSMOUTH

D. Smith (Air Taxis), R. H. Stocken (Pageant Manager), G. Birkett (Air Taxis), J. Jeffs (Control Officer), I. McClure (A.A.), C. Bird (A.A.), J. R. Ashwell Cooke, A. G. Lamplugh (B.A.I.C.). (FLIGHT Photo.)

flying by a flight from the C.F.S. at Wittering. On this occasion only three "Tiger Moths" (Gipsy III) took part instead of the five as at Hendon, but the display lost nothing and, in fact, gained therefrom. To see this flight, with Flt. Lt. J. B. Veal at the head, changing formation when inverted and doing such evolutions as tight turns both ways in "V" formation was an education not only for the extraordinarily high standard of their piloting, but also for the controllability of the "Tiger Moth." This is a machine which has been built expressly for cheap training, and it should make a very admirable aircraft indeed for those nations whose Air Force insists upon the highest class, but whose Treasury allows them only a small grant. One of the most impressive of their manœuvres was undoubtedly the simultaneous half-loop from line astern to line astern inverted and proceeding in the opposite direction. The extraordinary accuracy of their flying upon this occasion and the way in which they levelled off in the inverted position absolutely dead at the top of their loop was one of the most amazing things we had ever seen. Following the "Tiger Moths" came a flight of "Furies" from No. 1 (Fighter) Squadron, commanded by Sqd. Ldr. C. B. S. Spackman. As before, the flying of the flight was even more abandoned, but yet seemed even more accurate than at Hendon. The speed range of the "Fury" permits of the closest formations being kept with safety, and it is safe to say nothing better in flight aerobatics has been seen.

A somewhat lighter interest was then introduced by the "monstrosity" versions of the "Hart" and "Pterodactyl" shooting down "monstrosity" balloons. The lesson of Hendon had evidently been learned, for there was no question of the balloons failing to rise adequately here, and, as before, Flt Lt. G. H. Stainforth in the "Pterodactyl" scored the largest bag. Mr. H. A. Marsh demonstrated the "Autogiro" (Genet), F/O. C. F. Uwins the "Bulldog" (Jupiter), F/O. P. E. G. Sayer a "Fury" (Kestrel), Mr. F. F. Digby a "Ford" (three Wasps) and Flt. Lt. C. Clarkson a "Swift" (Pobjoy). Mr. G. Lowdell, the Chief Instructor of the Brooklands School of Flying, combined a crazy flying display with that of bombing a car with flour bags. Messrs. Tranum, De Greeuw and Fairlie made parachute drops, the first with an Irvin chute, incidentally from a "Spartan Arrow" flown by Mr. Irving himself, and the latter two with Russell Lobe chutes. Mr. Tranum, despite the bumpiness of the weather and the many machines in the air at the time, managed to land in the circle.

The final item, but certainly one of the most fascinating to watch, was the display of inverted flying by Flt. Lt. W. E. P. Johnson, which had been postponed from earlier

in the programme owing to previous delays. Flt. Lt. Johnson was flying a similar "Tiger Moth" to that used by the C.F.S. officers, and as he himself has only recently left the C.F.S., we naturally looked forward to something rather extra special. We were not disappointed. Flt. Lt. Johnson got the maximum out of the "Tiger Moth," both inverted and right way up. The accuracy and smoothness with which he performed every known form of aerobatic in either position was astounding, and the machine seems to lend itself very satisfactorily for either type of flying. We have already mentioned its suitability for training where the matter of first cost is important, and during a recent extended trial we were able to confirm this opinion.

The inverted engine gives a good view in front, and the adjustable seat in the pilots' cockpit is certainly of great

PORTSMOUTH-RYDE AIR FERRY SERVICE  
Time Table

Portsmouth, depart	Ryde, arrive	Ryde, depart	Portsmouth, arrive
10.15 a.m.	10.25 a.m.	10.35 a.m.	10.45 a.m.
11.40 a.m.	11.50 a.m.	12.10 p.m.	12.20 p.m.
3.15 p.m.	3.25 p.m.	3.35 p.m.	3.45 p.m.
7.15 p.m.	7.25 p.m.	7.35 p.m.	7.45 p.m.

Corporation express 'Bus Service connects with all departures from and arrivals at Portsmouth.  
' Bus Service to and from Sandown and Ryde, I.W.  
'Phone: Portsmouth, 6689. Ryde, 333. Shanklin, 324.

value, while those critics who demand an easy exit for both pilot and passenger, should either have to take to their parachutes, are fully answered in the "Tiger Moth," with its wide and deep doors each side of both cockpits and its lack of flying wires to the rear spar root fittings.

In the evening the Lord Mayor and Lady Mayoress (Alderman and Mrs. F. G. Foster) held a reception, which was followed by dancing, in the Guildhall, Portsmouth. During this function the cups and challenge trophy were presented.

The subject of Portsmouth Airport cannot be discussed without reference to the Portsmouth-Ryde Air Ferry Service, which is now running with regularity. The P.S. & I.o.W. Aviation Co., who are running this service, use a three-engined (Genet) "Westland Wessex," and the machine runs four times daily in each direction. An express bus service from Portsmouth has specially been arranged to connect with all departures and arrivals, as do buses from Sandown and Ryde in the island. As this journey only takes ten minutes from aerodrome to aerodrome, those business people who are in a hurry will be able to effect a considerable saving of time, and we doubt not that as soon as the regularity of this service becomes known it will prove extremely popular.

FROM HESTON

MONDAY, June 27.—Many machines left Heston today to attend the 280th anniversary of the discovery of champagne, the celebration of which took place at Rheims. They were:—Mr. White and one passenger, "Moth"; Miss Winifred Spooner and Mr. Lindsay Everard, Mrs. Vereker and the Hon. Leo

Russell, Mr. Davenport and Mrs. Norman, in "Puss Moths."

Mr. Ambler left for Paris in his "Puss Moth" with one passenger, returning during the evening. Viscomtesse de Sibour left for Paris in her Farman cabin machine.

Mr. Piper arrived from Paris. This terminated a ten-

days' tour which he carried out with a friend in his "Moth" through France, Spain and along the north coast of Africa.

*Tuesday.*—Banco conveyed the Hon. Mrs. Esmond Harmsworth and Lady Amy Biddulph to Dublin.

The Master of Sempill left for Betheny, France, in his "Puss Moth" and a Hawker "Hart" with Bristol engine left for Amsterdam with Flt. Lt. P. G. Lucas as pilot, while Maj. Scott left for Rotterdam in his "Avian."

General Balbo and party of six left for Berlin in the Breda "32."

Miss Winifred Spooner and Mr. Lindsay Everard returned from Rheims in a "Puss Moth."

An interesting arrival in his "Moth" was Sir Robert Clayton, Bt., with his wife, after his search in the Libian Desert for a lost oasis (described in FLIGHT for July 1).

*Wednesday.*—Three of the machines which had been to Rheims for the Champagne celebrations returned to Heston to-day.

Miss Gonda Van Raalte, the niece of Lady Howard de Walden, carried out her first solo flight to-day.

*Thursday.*—Mrs. Woolf Barnato was a passenger in Banco's "Puss Moth," which proceeded to Berck.

The Comper "Swift," with a Gipsy III inverted engine, was shown to advantage by Lt. Comper.

The hours flown by the Airwork School of Flying machines during the past month far exceeded those of

May, the Chief Instructor alone carrying out 116 hours' instruction during the month.

*Friday.*—The Westland Aircraft Co. gave demonstrations with a "Wapiti" to representatives of several foreign countries, including Persia and Poland.

Airwork, Ltd., have decided that, in future, no handling charges shall be made for machines housed at Heston. We are sure this will be greatly appreciated by private owners.

*Saturday.*—Banco sent two "Puss Moths" off this morning to Ostend and to Berck.

*Sunday.*—Customs lost no time in getting to business this morning, three machines being cleared before 10 a.m., i.e., G-ABVX, of Messrs. Hillmans, to Rheims, with Capt. Crawford Green, M.P., and Mr. S. Wootton Collier as passengers; G-ABGS, of Brian Lewis & Co., with Lady Rothermere as passenger, to Paris; and G-AAYC—Maj. Nathan—to Paris with one passenger.

The "Fokker" of Capt. Barnard is now on charter to Banco after being converted into an eight-seater.

From the number of inquiries for the combined dinner and night-flight ticket now being issued every Sunday at Heston, it appears the venture will meet with every success. The night flying will commence at 10 p.m. and finish at midnight. If only the weather continues as to-day, the sight of the lights of London from the air should be very beautiful (*vide* FLIGHT, June 24, pages 572-8).

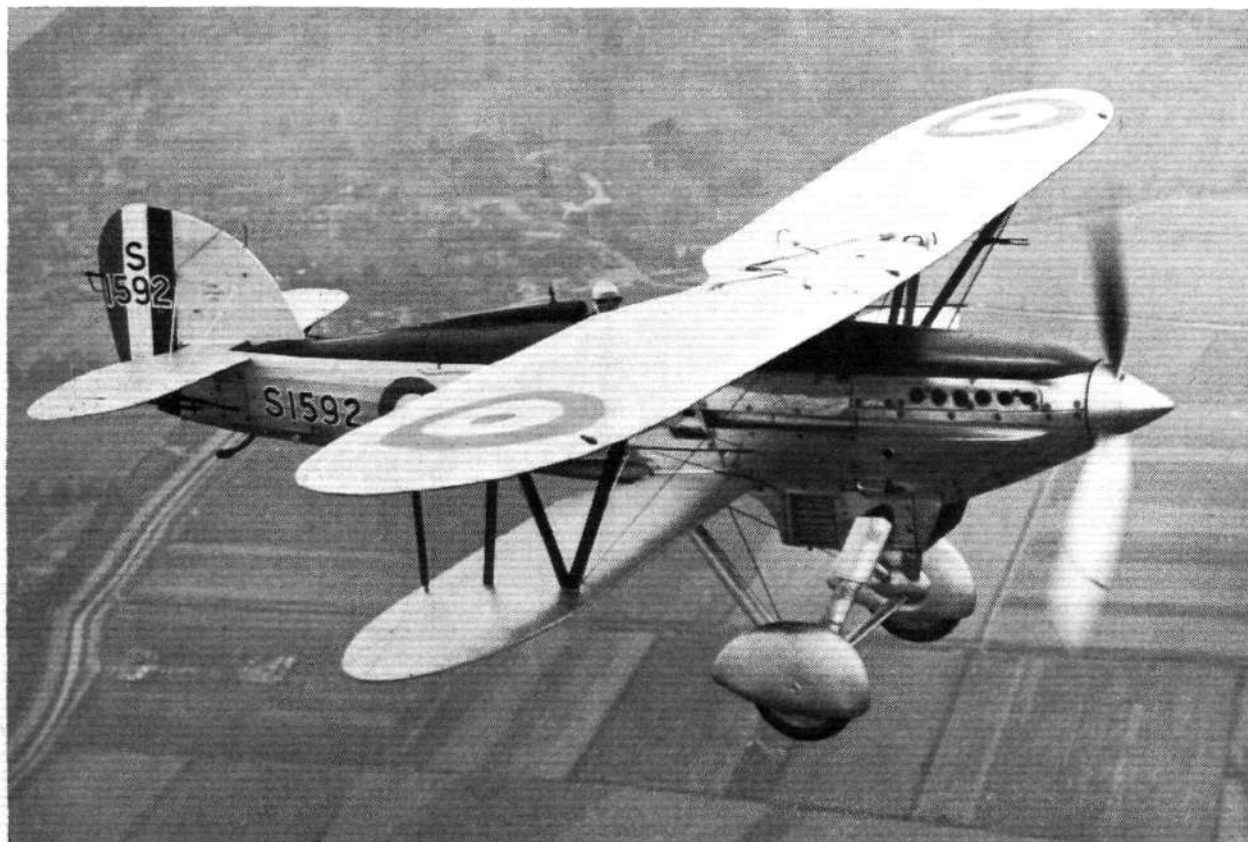
## DUBLIN'S CIVIL AIRPORT

THE Department of Industry and Commerce of the Irish Free State has approved Kildonan Aerodrome, County Dublin, the headquarters of Iona National Airways, Ltd., as a public aerodrome, Customs facilities being available for cross-Channel visitors. This aerodrome has hangar accommodation for several light planes and petrol and oil are obtainable, together with refreshment for pilots, in a clubhouse.

Since the licence for public use was granted there have been a number of visitors from England, including Capt. W. Ledlie, of Personal Flying Services, who, in the six-seater Junkers carried out joyrides over Dublin City and made several special charter trips to Manchester and London with photographs during the recent Eucharistic Congress. The Hendy 302—G-AAVT—was another news-

paper visitor, and during the Congress week quite a number of other machines flew across as it has been found easier to get away from than Baldonnel.

Mr. O. E. Armstrong, chief pilot of Iona Airways, has two "Moths" in service and is to increase the fleet in the near future. It is understood that a D.H. "Fox Moth" is to be delivered to the company early this month. One of Mr. Armstrong's recent charter jobs was the conveying of two passengers of the S.S. *Saturnia* from Dublin to Plymouth. These passengers had been injured in a car collision while on their way to join their ship in Dublin and were conveyed to hospital. On their plight being explained to Mr. Armstrong he arranged for himself and his assistant pilot to fly the passengers to the liner's next port of call in the two "Moths."



**THE FLEET FIGHTER:** The Fairey "Firefly III M" (Rolls-Royce "Kestrel") has been designed as a single-seater fighter for work with the Fleet Air Arm. On this occasion it was being piloted by Mr. Staniland, Fairey's Chief test pilot. (FLIGHT Photo.)



# Air Transport

## The Bristol-Cardiff Air Service

AT 9.20 a.m. on July 11, the first aeroplane will leave Bristol Airport on the new Bristol-Cardiff Air Ferry Service. This service is being operated by the British Air Navigation Co., Ltd., with the "Spider" flown by Capt. C. D. Barnard. The aeroplane service has been linked up with special motor coach services in both Bristol and Cardiff, which will enable the inclusive journey from the Grand Hotel, Bristol, to the Angel Hotel, Cardiff, to be completed in 40 min., as against 1 hr. 20 min. for the journey by railway. The service will be operated four times a day in each direction to begin with, and more frequently later if traffic justifies. The first week will be in the nature of a demonstration, with the object of testing the possibilities of this service, and, should it prove successful, it will continue at least throughout the summer and autumn months of this year. Numerous branch booking offices have been organised throughout the cities of Bristol and Cardiff, with one central booking office at each of the city aerodromes.

## Fast Mail Service to Canada

LETTERS placed on board the Canadian Pacific liner *Empress of Britain* at Southampton on June 24 were delivered in Montreal on June 28, having occupied only 4 days and 3 hours in transit. This was the result of the first of the Canadian Government's new aeroplane-ship-to-shore service, previously referred to in FLIGHT. The liner reached Red Bay, in the Straits of Belle Isle, at 1.30 a.m. on June 28, and 14 sacks of mail were transferred to a minesweeper, which conveyed them to a seaplane lying in the sheltered waters of Bradore Bay. Leaving at 5.30 a.m., the seaplane reached Havre St. Pierre, north of Anticosti Island, at 7.40 a.m., having flown at 124 m.p.h. There the mails were transferred to another seaplane, which flew 290 miles to Rimouski at 92 m.p.h., arriving at 10.5 a.m. Owing to rough weather she had to alight inland at Lac Laguille, and time was lost in taking the sacks by car to the aerodrome, where they were placed in a Fairchild No. 71 aeroplane which left at noon for Montreal. Flying at 100 m.p.h. she arrived at the Saint Hubert Airport outside Montreal at 3 p.m. The Ottawa mail was transferred to another aeroplane, which reached the Rockcliffe Aerodrome here at 4.45. The total flying time from Bradore Bay to Ottawa was exactly 10 hr. Ten such air mail services are planned for the next two months, and if they continue to be as successful as the first the system will probably be permanently adopted.

## The Arctic Air Route

ACCORDING to *The Times* for June 30, an expedition is about to leave England to carry on the work of the

British Arctic Air Route Expedition, 1930-31. The investigations to be made will show finally whether the air route across Greenland is a practical possibility. The expedition consists of four members, all British, who were all members of the 1930-31 expedition. The leader is Mr. H. G. Watkins, and the other members are:—Mr. John R. Rymill (surveyor), Mr. Quintin Riley (meteorologist) and Mr. F. Spencer Chapman (ornithologist, surveyor and photographer). The expedition is financed by Pan-American Airways, who, although they have not lost interest in the Azores route, are taking the lead in preparation for a possible North Atlantic air route. Trans-American Air Lines are also associated with the venture. The work done by the expedition will be co-ordinated so far as possible with the work of the International Polar Year, and the data gained will be available to all responsible flying companies of Europe. In England the expedition has the financial support of the Royal Geographical Society, the Air Ministry is giving its assistance, and Denmark is helping.

## Imperial Airways' Sunday Services to Paris

IMPERIAL AIRWAYS announce that owing to the extra heavy week-end traffic on their Croydon-Paris route they have decided to operate Sunday services as on weekdays. There are now, therefore, three services in either direction every Sunday, leaving Croydon at 8.30 a.m. 12.30 p.m. and 6 p.m.

## Air-Orient Extension to Hong Kong

M. NOGUES, Director of the Air-Orient Co., stated in Rangoon last week that his company intended to extend the present air mail service, from Paris to Hanoi, to Canton and Hong Kong. This extension would be completed as soon as possible.

## A Clyde-Belfast Air Service

BELFAST Harbour Commissioners have granted British Flying Boats, Ltd., Edinburgh, anchorage facilities in Belfast Lough for an experimental flight service between the Clyde and the Northern capital. British Flying Boats, Ltd., is a private company registered in Edinburgh, the directors of which are the Duke of Montrose (chairman), Sir Malcolm M'Alpine, Lord Malcolm Douglas-Hamilton and Flt. Lt. J. Gordon Murray. It is understood that amphibian flying-boats will be used, and that a Saro "Cloud," fitted with Wright "Whirlwind" engines and carrying 12 passengers, is due to be delivered this week-end. Prior to the experimental service, which will start in August, a series of flights or tours will be carried out in Scotland, visiting Dunoon, Greenock (thence to Isle of Man), Ayr, Rothesay, Portobello, Edinburgh, Loch Lomond, etc.



**THE CURTISS "CONDOR":** A commercial version of the American "Condor" night bomber. It has two 600 h.p. Curtiss "Conqueror" engines and is fitted with a Sperry "Automatic Pilot." Accommodation is provided for 18 passengers and a crew of 3. Its speed range is 57—139 m.p.h.



# Private Flying & Gliding

## THE COTE HILL MEETING

Small local flying meetings are often cheerier and more pleasant than are the larger, heavily and widely organised ones. There is something more "matey" in gathering at an aerodrome for tea in the first place, with flying only as secondary consideration. After all, there can be very few people who do not know all the usual aerobatic sequences by heart, and to the majority the time is far more profitably employed in engendering the party spirit than it is in watching Smith do his usual demonstrations and Brown do his usual aerobatics.

Just such a party was that organised by the Hon. T. A. Verney-Cave at the Cote Hill Aerodrome, near Rugby, on Sunday, July 3. The establishment of this aerodrome is largely due to the foresight of the owner, Mr. Cecil Lees, and the crowd he gathers at his meetings shows the keenness which local people have for flying. Messrs. F. J. Holmes and A. N. Kingwill brought down three of their Avros, two of which are now fitted with Armstrong-Siddeley "Mongoose" engines, a combination which has proved excellent for joyriding, and these aircraft were kept busy until dusk.

Several of the visitors took part in the programme, which opened with a formation flight by members of the Leicestershire Aero Club on "Moths."

Flt. Lt. W. E. P. Johnson arrived in the demonstration "Tiger Moth" (Gipsy III) which is fitted for inverted flying, and his display of inverted flying was naturally one of the chief features of the afternoon. Now that Flt. Lt. Johnson has returned to civil life he has been seen at many flying meetings in this "Tiger Moth"—usually head downwards!—and there seems quite a large amount of competition on the part of club secretaries to get his assistance at their displays, and, having seen the way he handles the "Tiger Moth," we are not surprised.

Flt. Lt. Kingwill threw a "Mongoose" Avro about in an amazing manner and gave the crowd plenty of thrills which certainly appeared to have the desired effect, as thereafter they "joyrided" freely.

Col. L. Strange, another of the visitors, who arrived with Mrs. Strange in a Spartan "Arrow," showed off the slow-flying capabilities of his aircraft and, helped by the wind, he at times stood still over the aerodrome.

After tea Lady Braye presented cups to Flt. Lt. Johnson and Flt. Lt. Kingwill, a generous gesture which was greatly appreciated.

## REDWING AIRCRAFT MOVE TO GATWICK

The Redwing Aircraft Co., Ltd., celebrated their move to Gatwick Aerodrome by holding an At Home to their friends on Friday, July 1.

This company have now taken over the aerodrome and the Surrey Aero Club, which latter is housed in a most delightful old-world timbered cottage, illustrated in FLIGHT for April 10, 1931. This stands in an attractive

garden on the edge of the aerodrome. In this same building are the offices of the company, and the factory, which is at present at Colchester, will later also be moved to this aerodrome.

Under its new management the club should prosper, for there are few pleasanter places at which to fly than Gatwick, while for those who wish to use the aerodrome as a port of call there is every facility.

The Redwing Co. has to a certain extent been reconstituted, and the board now consists of Mr. R. C. Bartlett, Mr. A. L. Bostock, Mr. H. R. Trost and Mr. J. Kenworthy. The latter, as our readers will know, is the designer of the "Redwing." Mr. Kenworthy told us that he is shortly bringing out another aircraft which is in effect a Sports "Redwing," so that the range offered for sale will then include a light, cheap and easy-to-fly aircraft very suitable for club use, followed by the sports version for those who desire something somewhat faster for serious cross-country work.

During the afternoon we had the pleasure of meeting Mr. F. O. Bezner, who is, so to speak, the man behind the scenes. Mr. Bezner—represented on the board of the company by Mr. Bartlett—has backed the Redwing Aircraft Co. ever since it was formed from the old Robinson Aircraft Co., and such is his faith in the future of the light aircraft industry and of the "Redwing" in particular, that he will continue to do so in the face of older established light aircraft manufacturers. Mr. Bezner is a man who likes to do things well, and as an illustration of this we might mention the fact that in order to make the afternoon more pleasant at Gatwick he specially brought up from Wilton, near Salisbury, where he lives, the local band, which, incidentally, owes its foundation to him.

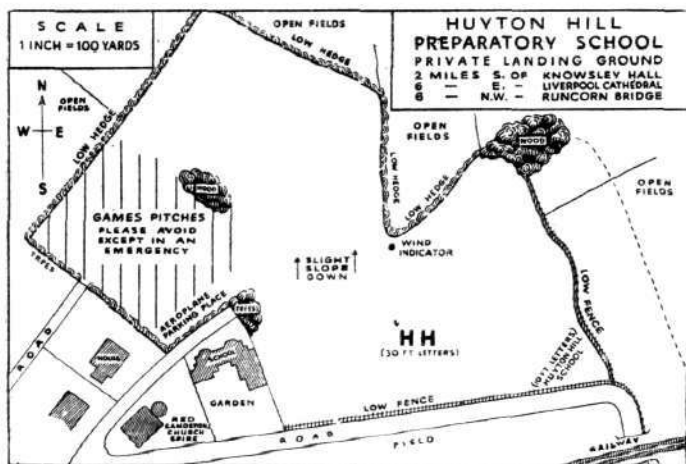
A short flying programme was carried through during the afternoon which included demonstrations of aerobatics, formation flying and slow flying on "Redwings." Eight of these aircraft were lined up on the aerodrome, and of these four had come from districts as far apart as Colchester (Mr. Howie) and Salisbury (Mr. Doran Webb). Among the visitors, all of whom took a keen interest in the aircraft, were the Duchess of Bedford and Col. Outram, the Director of the Aeronautical Inspection Directorate. Mr. Kenworthy was until recently serving under Col. Outram, but has now, on his appointment to the board of the Redwing Co., resigned his position with the A.I.D.

## DE HAVILLAND SUCCESSES

In France at the recent Boulogne-sur-Mer Meeting, on June 25, Mr. Boris won the Rally in a "Puss Moth" carrying two passengers besides himself. He completed 912 miles in the eight hours of the test, making an average speed of 114 m.p.h. Forty-eight competitors started; out of these the second place was gained by the new "Caudron" with a Gipsy III engine. This machine carried 2,428 lb. with four people on board.



The Clubhouse of the Liverpool and District Aero Club at Hooton Park, Cheshire. (FLIGHT Photo.)



## HUYTON HILL SCHOOL LANDING GROUND

Probably the first school in the country to have a landing ground of its own is Huyton Hill Preparatory School, near Liverpool. This is alongside the railway running E.N.E. between Liverpool and St. Helens, being two miles south of Knowsley Hall and six miles N.W. of Runcorn Bridge. The ground is marked by H.H. in the centre, and, though not very large, it suffices for all ordinary light aircraft. On Friday, July 1, Col. the Master of Sempill arrived, together with five other machines for the opening ceremony. He addressed the boys and congratulated the headmaster on establishing this, the first school landing ground. The headmaster, in reply, said that he hoped soon to take his boys for geography lessons in the school aircraft.

## NORTHANTS CLUB MEETINGS

There will be a Flannel Dance and Supper Party on Friday, July 8. It is hoped that all who come to Sywell to see the King's Cup Race will stay for this dance. Those wishing to stay the night are asked to write to Mr. G. Linnell, Wilbye House, Wellingborough.

The Northants Aero Club will hold a Flying Meeting at Banbury on Sunday, July 10. The field lies about a mile and a-half from the town on the left of the Banbury-Warwick Road. The Ladies' Committee will arrange a very informal picnic tea on this Sunday. All pilots who enjoy this sort of entertainment will be welcomed.

The Flying Meeting at Lord Willoughby de Broke's aerodrome at Kinton will be on Saturday, July 23.

## § TAG LANE

Over 23 hr. instructional flying were done last Saturday on the four club machines, which it must be admitted is an extraordinarily fine achievement. Mr. A. F. Grant, a Canadian member, has successfully passed the night-flying portion of his "B" licence tests. Incidentally, it does not seem to be generally known that the club machines are fitted for both night and instrument flying, and that a considerable amount of instruction has been given in both these branches. The club achieved very considerable success at the Portsmouth Meeting on Saturday, as Flt. Lt. W. E. P. Johnson, one of their original members, not only won the S.B.A.C. Cup but came in second in both the Grosvenor Cup race and the Portsmouth Challenge Trophy races, while Mr. L. Lipton, another member, was second in the S.B.A.C. race. The supper and dance which was held in the clubhouse on the evening of the R.A.F. Display successfully attracted a large crowd.

## READING NOTES

Members have been interested in the new wooden "Moth" (Gipsy III), which type was illustrated in FLIGHT for June 17 (p. 537), recently delivered to Mr. Sear. The inverted engine gives the pilot of this machine a greatly improved outlook forward, while the take off is exceptionally good. Mr. Sear proposes to fly the machine back to Kenya. Night flying was continued last week-end until after 1 a.m. so great was the demand. Mr. B. Mirza, who hopes shortly to take his "B" licence, took the opportunity to make several landings. The Parachute School which was instituted at the Phillips & Powis School of Flying last year has been busy lately, and several trips have been booked for the forthcoming week-end, amongst which is that of Mr. Gwynn Johns to

Aberystwith. Two of the club members, Messrs. Smith and Allen, recently took a very successful holiday in their "Moth" (Gipsy I) during which they flew to Nice.

Those who do not know what the Phillips & Powis School and the Reading Aero Club provide should send for a copy of a very interesting and well-illustrated publication which will tell them all they want to know. *Bona fide* inquirers may have a copy of this booklet if they write, mentioning FLIGHT, to Phillips & Powis Aircraft, Ltd., Reading.

## BROOKLANDS

Over 50 hr. flying have been carried out during the last week and the Service Department is working overtime so as to cope with the orders it has in hand. During this time Mr. Penn Hughes and Mr. Goodbody have both made successful solo flights. Mrs. Woolf Barnato has joined the club and the Hon. Mrs. Westenra has made excellent progress in her blind flying course. This course still continues to create a great deal of interest, and the instructors are kept on full time. The College of Aeronautical Engineering Aero Club is progressing extremely well and one of their members, Mr. Goodbody, as mentioned above, has already gone solo. Naturally, the outstanding item of interest this week will be the King's Cup Race, as Brooklands is the start and finish on both Friday and Saturday.

Δ T YEADON

Six members joined the Yorkshire Aeroplane Club during June, amongst them being Mr. Geoffrey Shaw and Mr. A. C. Thornton. The latter is the designer of the "Arrow Active," and his latest production, the "Active II," has been much in evidence, being tested by F/O. H. H. Leech. Club flying has been increasing very satisfactorily, and the last two weeks are well above the average obtained for the same period last year. With two of the club members lately being married and a visit of Sir Alan Cobham's National Aviation Day, there has been not a little excitement in the club recently, while quite a large number of visitors have looked in. On June 14 a record was created, as the oldest lady who has yet flown made her first flight in one of the club machines. This was Mrs. L. Barrett, of Leeds, aged 83 years.

## DONCASTER

The Danum Aero Club held their first dance on June 29. This was largely due to the sporting spirit of the Misses Halder, Beech, Trimmings, Roe, Hankin and Richardson, who played the part of cabaret girls, and the Misses Goodacre, Wood and Stanley who did such excellent work behind the refreshment bars. Mr. H. Peake very graciously threw his house open to all for the occasion.

## GENOA MEETING

Some 70,000 spectators were present at the coastal flying meeting at Albaro, Genoa (organised by the Aero Club) on June 29. The meeting opened at 4 p.m. with a Fly Past and evolutions by three squadrons of "S.85" machines from Cadimare, followed by a speed test over a closed circuit of 65 km. for tourist machines in which 11 took part. This was won by Stoppani on a Cant 26 seaplane, Comdnt. de Bernardi being second. Aerobatics by de Bernardi, balloon bursting, and the bombing and destruction of a "submarine" concluded the meeting.

# LONDON GLIDING CLUB

The standard of piloting is visibly and obviously increasing at the London Gliding Club. Soaring flights of 10 min. have now become to be looked upon as mediocre, those of 20 min. quite general, and those of an hour no necessarily skilful but merely greedy. Landings back at the starting point on the hilltop are now quite normal and failure to do so ensures for the pilot a considerable amount of leg pulling. The club "Professor" has been overhauled and the other machines are all in good condition. The "Poppenhausen" two-seater went through her first trials on this day, after her resuscitation. On Saturday, July 2, Buxton soared this machine solo to start with and then spent the rest of the day taking up one passenger after another. Simmonds soared Miss Lippen's "Professor" twice for over half an hour each time, while Dewsbury spent 1½ hr. between Dunstable Town and the Zoo in the "Kassel" 20. The number of machines available at the club now makes a very imposing list, and members may be assured that given suitable wind conditions there is very little waiting for a flight.



# Airisms from the Four Winds

## Another Round-the-World Flight Starts

Two American airmen, Bennett Griffin of Oklahoma and James Mattern of Fort Worth, Tex., took off from Brooklyn early on July 5 on the first stage of a flight round the world. They are flying a dual-control Lockheed "Vega" (No. NR. 869), *Century of Progress*, painted red, white and blue, fitted with a 550-h.p. supercharged Pratt & Whitney "Wasp" engine, and hope to beat the record of 8 days, 15 hr. 51 min. set up last June by Wiley Post and Harold Gatty on the "Vega" *Winnie Mae*. Harbour Grace, Newfoundland, was reached the same evening in spite of delays *en route* owing to fog. Shortly after (at 9.59 p.m. G.M.T.) they set out across the Atlantic for Ireland—or all being well direct for Berlin. Their route after this is expected to be via Moscow, Omsk, Novo Sibirsk, Yakutsk, Siberia, Fairbanks, Edmonton and New York. The airmen passed over Rosapenna, County Donegal, at 9.35 a.m. (G.M.T.) on July 6, but did not land.

## Lost German Airmen Found

CAPT. HANS BERTRAM and his companion Herr Clausman—the two German airmen engaged on a trade propaganda flight in the Far East, who were lost in the Australian Bush since May 16—have been found alive after practically all hope had been abandoned. They were found starving by aborigines on June 22 some 12 miles from their abandoned Junkers seaplane. On June 29 a search party reached them and took them to the coast *en route* for Wyndham.

## Italian Seaplane Leaves England

THE Italian Savoia flying-boat, which is on its way home from Iceland, called at Plymouth to refuel, and left for Valentia, Ireland, on July 5.

## Capt. Stack Returning from India

CAPT. N. STACK, who recently flew the Spartan Mailplane (three "Gipsy III" engines) to Karachi and demonstrated the machine to the Director of Civil Aviation in India, started on the return flight home on July 1.

## Gold Medal for Comte de Sibour

THE COMTE DE SIBOUR has been awarded a gold medal by the French Academy of Sports for his aviation performances last year.

## Record Parachute Jump ?

THE Paris correspondent of *The Times* reports that a French airman named René Machenaud, on June 29, made what is claimed to be a record parachute descent from a height of 7,500 metres (24,600 ft.). The descent took

23 min., and during this time Machenaud drifted over 12 miles.

## To Fly the Tasman Sea

MR. R. MITCHELL, a member of the Mosman Aero Club, Sydney, is planning a flight across the Tasman Sea in a "home-made" monoplane fitted with a 110-h.p. water-cooled engine designed and constructed by Mr. L. J. R. Jones, of the Ultimo Technical College.

## A New Mount for Frank Hawks

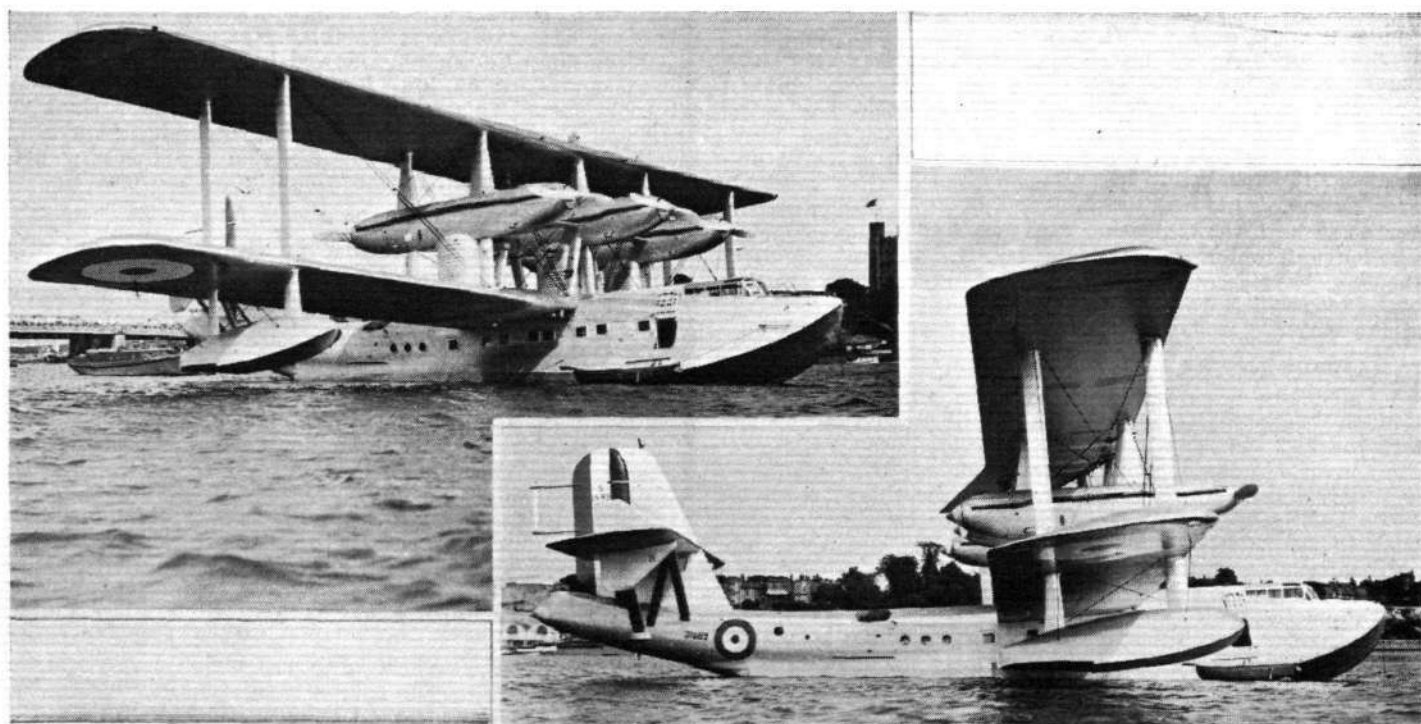
A SPECIAL all-metal monoplane, designed for fast long-distance flights, is being built for Capt. Frank M. Hawks, who was recently discharged from the Massachusetts Hospital following his accident last April. This machine, which is being built by the Northrop Corp. of Inglewood, Calif., is of the transport type—somewhat on the lines of the Northrop's "Gamma"—powered with the new Wright GR-1510 geared double-row radial 14-cylinder engine, developing approximately 700 h.p. It will have the following characteristics:—Span of 48 ft.; length of 29 ft. 4½ in.; wing area of 363 sq. ft.; weight empty 3,150 lb.; gross weight, 7,000 lb.; fuel capacity, 600 galls., giving a range of 2,500 miles at over 200 m.p.h. The machine is expected to be delivered by September next.

## To Denmark by Autogiro

MR. R. A. C. BRIE, chief pilot of the Cierva Autogiro Co., recently flew a C.19 Mark IV open two-seater Autogiro from England to Copenhagen in 27 hr. He left Lympne on the morning of June 23, reaching Bremen the same evening, and proceeding next morning, arrived at Copenhagen at 2 p.m.

## County of Middlesex B.S. Town H.Q.

THE Air Council have recently bought a house known as Heath Brow (once occupied by Sir Hall Caine), on Hampstead Heath, as a town headquarters for No. 604 (County of Middlesex) (Bomber) Squadron, A.A.F., and proposed to build a lecture hall in the grounds. The Air Council have stated that only when they were assured that the property was free from restrictions did they enter into the negotiations for purchase. It has since been found that this use of the house would be contrary to the Highgate and Hampstead Town Planning Scheme. The Hampstead Borough Council has asked the L.C.C. to take any action necessary to uphold the provisions of the scheme. It is understood that a Government Department is not subject to the provisions of the Town Planning Act, but it is believed that the Air Council will not exercise their rights on these grounds.



IN HER HOME WATERS: The Short six-engined flying boat ("Buzzards") at Moorings on the Medway. The official designation of this boat is "Flying Boat R.6/28." (FLIGHT Photos.)



# The New Hermes IV Engine

**D**ESIGNED and built by the Cirrus-Hermes Engineering Co., Ltd., Croydon Aerodrome, Surrey, the "Hermes IV" is a four-cylinder, in-line, inverted, air-cooled engine of 120 normal b.h.p. The new engine has behind it all the accumulated experience of hundreds of "Cirrus" and "Hermes" engines, and is of somewhat greater power than these, while at the same time incorporating a number of improvements and refinements which the past two years of research have shown to be desirable.

The general design of the new "Hermes IV" has been planned with the object of giving an improved forward view, higher propeller thrust line, and greater accessibility for examination and maintenance. The particularly new features are the new design of cylinder head, and the totally-enclosed valve gear. As recorded in *FLIGHT* recently, the engine has passed the British Air Ministry's type tests (at the first attempt), and the first of these engines to be put on the market will take part in this week's King's Cup race, installed in the Percival "Gull" monoplane three-seater.

## Constructional Features

**Cylinders.**—These are made from special centrifugally cast iron, and the fins are machined from the solid, thus ensuring sound castings and maximum rigidity and heat radiation. The cylinders are located in the crankcase by deep spigots.

**Cylinder Heads.**—Detachable aluminium cylinder heads, of special design and adequate cooling fin area, are held in place by long studs projecting from the crankcase and passing through the cylinder fins. Each head is fitted with one large inlet and exhaust valve; the aluminium bronze seatings are screwed and expanded into position.

Phosphor-bronze valve guides are force-fitted in the head, and two bronze adaptors are screwed into the head to take the sparking plugs.

**Pistons.**—The pistons are aluminium alloy castings of sturdy design, in which the importance of heat distribu-

Type .. ..	Inverted, 4 cyl. in-line air-cooled.
Drive .. ..	Direct.
Bore .. ..	120 mm.
Stroke .. ..	140 mm.
Cubic capacity ..	6,330 cc.
Normal b.h.p. ..	120 at 2,000 r.p.m.
Maximum b.h.p.	130 at 2,200 r.p.m.
Compression ratio	5.1:1.
Petrol consumption	7.8 galls. per hour at 9-10ths full throttle.
Oil consumption	1 pint per hour.
Direction of rotation	Right-hand tractor.
Weight complete	300 lbs.
Length overall ..	1,077 mm.
Height overall ..	739 mm.
Width between engine bearer centres	540 mm.

tion has received careful consideration. The gudgeon pin, which floats in both the piston and the small end of the connecting rod, is located at each end by circlips.

**Connecting Rods.**—These are made from high-quality steel stampings, carefully machined all over, thus ensuring adequate strength with minimum weight and also a high degree of balance. White-metal-lined bearings are provided in the big ends, and movement is prevented by a dowel secured in the connecting-rod cap. A phosphor-bronze bush is tightly pressed into the small end of the rod.

**Crankshaft.**—This is a high-quality alloy steel forging carried in five die-cast bearings of ample dimensions, with a substantial journal ball-bearing fitted at the front to absorb propeller thrust, giving throughout perfect alignment, thus ensuring maximum smoothness in running.

**Camshaft.**—A one-piece camshaft, driven by a train of spur gears, is carried on five substantial bronze bearings fitted in the lower half of the crankcase.

**Propeller Hub.**—The engine is supplied with propeller hub complete, and valve timing is facilitated by a timing pointer on the propeller boss.

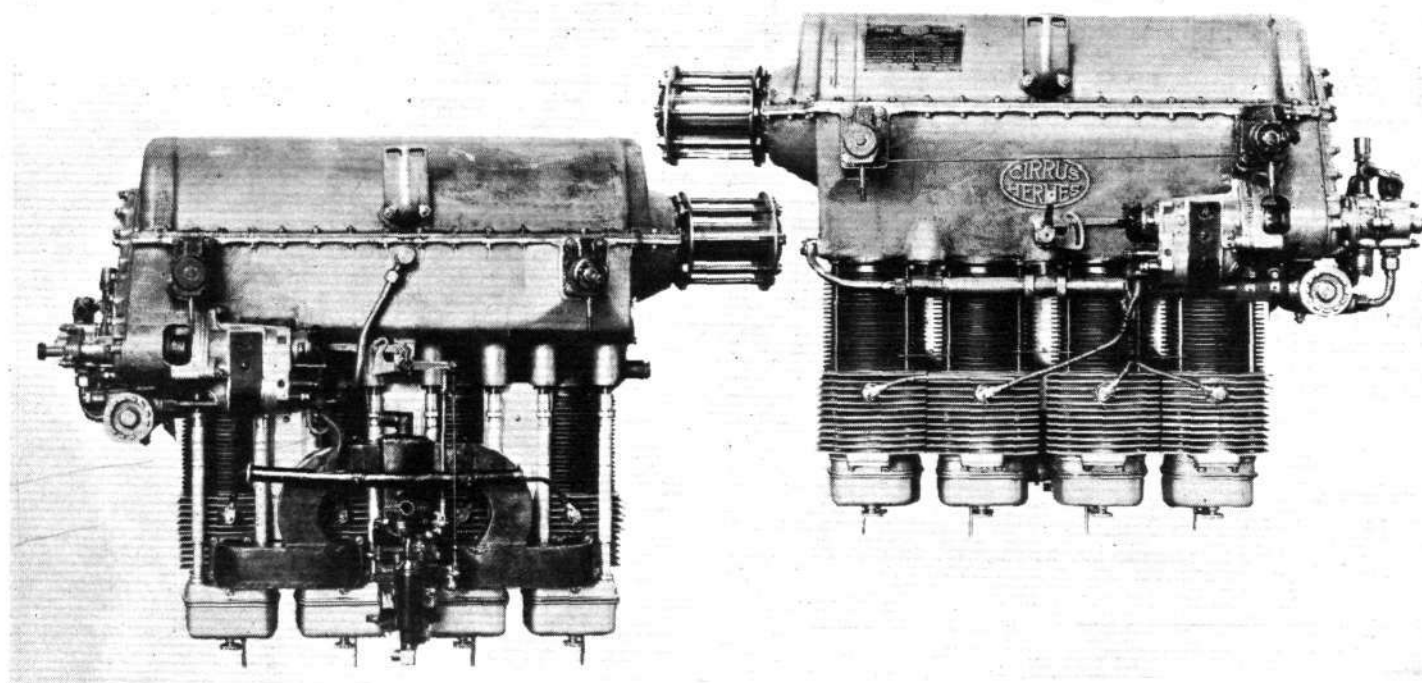
**Carburation.**—The engine is fitted with one Claudel Hobson type AV.48.D carburettor, which is equipped with altitude control for operation at high altitudes.

**Valves and Valve Gear.**—The valves, which are made of K.E.965 steel and interchangeable, are operated by the camshaft through the medium of tappets, tubular push rods and rocker levers.

The whole operating mechanism is completely enclosed in leak-proof and dust-proof casings, which are readily accessible for examination when required.

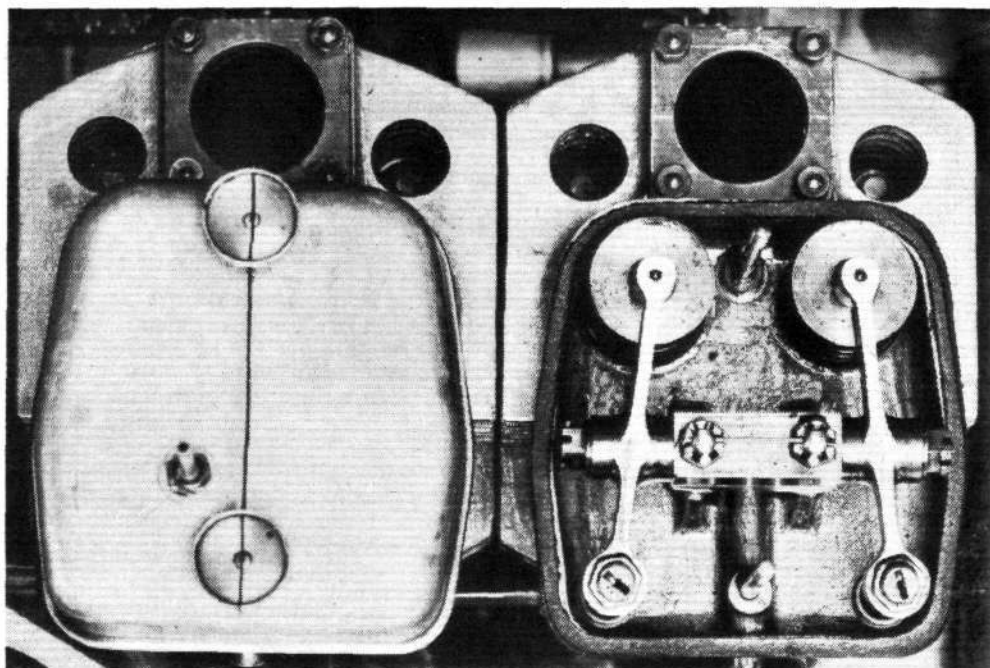
The rocker gear, working in a constant-level oil bath, ensures adequate lubrication to all parts of the valve mechanism.

**Ignition.**—Two magnetos, which are driven through the medium of vernier couplings to facilitate accurate timing, provide a dual-ignition system. One magneto is fitted with an impulse starter to ensure easy starting.



THE HERMES IV : Views of induction and exhaust sides.

**THE HERMES IV :** View from below of two cylinders, one with the valve gear cover removed.



**Starter and Auxiliary Gear.**—Provision is made for the fitting of hand or compressed-air starter; also for the driving of fuel pumps, gun-gear mechanism or other auxiliaries, and these can, if required, be fitted at extra cost.

**Crankcase.**—The lower portion is an aluminium alloy casting, and houses the main bearings, while the timing gears are carried at the rear end. Being a dry sump type engine, the upper half of the crankcase, which is in electron metal, merely acts as a cover for the moving parts.

**Lubrication.**—Oil is pressure-fed throughout the lubrication system by an oil delivery pump from the oil tank. A scavenger pump is also fitted to take the oil from the crankcase after use.

**Engine Bearer Feet.**—Resilient engine bearer feet are supplied as part of the equipment of the engine.

**Engine Cowling.**—It will be appreciated that with the special design of cylinder head which has been adopted, it

is now only necessary to provide a side chute for the cooling air, and arrangements are being made so that this chute will be an integral part of the engine and will be supplied with it.

## SKY WRITING

**T**HE Select Committee appointed by the House of Commons "to consider the use of appliances for projecting writing or other displays on the sky, or for broadcasting speech or other sounds from aircraft," has now presented its report. The committee was composed of Sir Arthur Steel-Maitland, Mr. Buchan, Capt. Bullock, Mr. Cocks, Maj. Llewellyn, Mr. Llewellyn-Jones, Mr. Lovat-Fraser, Mr. Mander, Mr. McEntee, Col. Moore-Brabazon, and Mr. Parkinson.

The committee recommend that smoke-writing should not be prohibited or controlled. They do not recommend any change in the existing law as regards trailing advertisement banners from aircraft. They recommend that sky-shouting (by means of a loud speaker) should be prohibited by law for all private purposes, as they feel that its use, "whether it be added to the already considerable volume of noise that obtains in an active urban area or in the comparative quiet of the country-side, would be an unnecessary and intolerable imposition."

Night sky-writing, by projection of light on to clouds at night, was considered at no little length. The recommendations are made under the five heads of Area, Location, Time, Number, and Matter. Under the heading Area, the committee recommends that legislation should be introduced to prohibit night sky-writing in rural areas for all private purposes, though a local council may permit it on special occasions; but in urban areas night sky-writing should be freely permitted. Under Location, the committee recommends that the use of a sky projector should be forbidden within a definite radius of any ancient monument or building of historic importance. Under the heading Time, the committee recommends that all private sky-writing should be forbidden in any area on Sundays. For control of the Number of machines in any area and of the Matter to be displayed, the committee recommends that a voluntary body should be set up, representing advertising interests, which should act with the other

parties concerned in making what limitations are desirable.

In arriving at these conclusions, the committee were impressed by the following considerations. No writing is possible on a clear sky night. Clouds are necessary, and only certain forms of cloud make a satisfactory screen for the purpose. The average range of good visibility is believed to be a circle of about a mile radius. In summer the period of darkness is short, and it is estimated that on the average through the year not more than one hour per night is suitable for projection.

From the point of view of public safety, the War Office stated that there was a possibility of sky-writing searchlights interfering with air defence searchlights, and that at present there was not sufficient power to control sky-writing in such cases. At the same time, Maj. Savage's invention might be useful. The Air Ministry stated that in its present form the apparatus was not a danger to air navigation provided that the base was not moved during one night. There would be no objection to a change of base on successive nights. Trinity House represented that danger to life at sea might be caused if the projectors were used in proximity to a lighthouse or port. The existing powers for dealing with false lights do not seem to give the degree of control necessary for dealing with this point.

As regards interference with natural amenities, the committee, after witnessing a display of night sky-writing, considered it "far more pleasant than many permanent forms of advertising to which the people of this country are unfortunately too accustomed." It is evanescent and its use causes no irreparable damage; consequently it is peculiarly susceptible to intelligent control. If at some particular spot it is found incongruous with the surroundings, it is merely a matter of administrative machinery to ensure that the offence is not repeated. The committee do not consider that the present is a time at which a new industry, however small, should be unnecessarily hampered or driven abroad.

### Reid & Sigrist Turn Indicators

On June 20 Mr. Justice Luxmoore, in the Chancery Division, gave judgment in favour of Reid & Sigrist, of Canbury Park Road, Kingston-on-Thames, in their action against Mr. Douglas George King Moss, of Selby Road, Anerley, and Mechanisms, Ltd., of 6a, George Street, Croydon. The claim of Reid & Sigrist, Ltd., was that Mr. Moss was not the true and first inventor of certain designs of novel features of gyroscopic turn indicators. In giving

judgment Mr. Justice Luxmoore said that he was of the opinion that certain turn indicators made by Mr. Moss were substantially in accordance with information and knowledge he had acquired when employed by Reid & Sigrist, Ltd. Reid & Sigrist were therefore granted an injunction to restrain Mr. Moss and Mechanisms, Ltd., from using or disclosing the methods of construction or features of the design of gyroscopic turn indicators. Judgment was entered accordingly with costs.



# THE ROYAL AIR FORCE

## HALF-YEARLY PROMOTIONS

The Air Ministry announces:—  
The undermentioned promotions are made with effect from the 1st July, 1932:—

### General Duties Branch

*Group Captains to be Air Commodores:* Charles Dempster Breese, A.F.C.; Arthur Sheridan Barratt, C.M.G., M.C.; Ernest Leslie Gossage, D.S.O., M.C.

*Wing Commanders to be Group Captains:* Philip Babington, M.C., A.F.C.; George Ronald Macfarlane Reid, D.S.O., M.C.; Roderic Maxwell Hill, M.C., A.F.C.; Charles Hubert Boulby Blount, O.B.E., M.C.; Ernest William Norton, D.S.C.; Alfred Guy Roland Garrod, O.B.E., M.C., D.F.C.; Conway Walter Heath Pulford, O.B.E., A.F.C.; Richard Beauchamp Maycock, O.B.E.

*Squadron Leaders to be Wing Commanders:* Henry Karslake Thorold, D.S.C., D.F.C., A.F.C.; John Oliver Andrews, D.S.O., M.C.; Eric Digby Johnson, A.F.C.; Roger Henry Gartside Neville, O.B.E., M.C.; Paul Bernard Hunter; Albert Peter Vincent Daly, A.F.C.; Claude Hilton Keith; Wyndham Brookes Farrington, D.S.O.; George Clark Pirie, M.C., D.F.C.; John Hilliard Simpson; John Cotesworth Slessor, M.C. (Acting Wing Commander).

*Flight Lieutenant to be Squadron Leader:* Louis James Chandler, M.B.E.  
*Flying Officer to be Flight Lieutenant:* Benjamin Thomas Crook.

### Stores Branch

*Wing Commander to be Group Captain:* Lawrence Auker, O.B.E.  
*Squadron Leaders to be Wing Commanders:* Percy Mead Brambleby; William Charles Clark.

### Accountant Branch

*Flight Lieutenants to be Squadron Leaders:* John Sullivan; Edwin James Grout; Herbert Wellstead Capener.

### Medical Branch

*Wing Commanders to be Group Captains:* Basil Alfred Playne, D.S.O., M.B., B.Ch., M.R.C.S., L.R.C.P.; Harold Edward Whittingham, C.B.E., M.B., Ch.B., F.R.C.P. (E), F.R.F.P.S. (G.), D.P.H., D.T.M., & H.

*Squadron Leaders to be Wing Commanders:* Gerald Struan Marshall, O.B.E., M.R.C.S., L.R.C.P., D.P.H., D.T.M., & H., L.D.S.; Raymond William Ryan, M.B., B.S.; Henry Samuel Crichton Starkey, O.B.E., M.D., B.C., M.R.C.S., L.R.C.P., D.P.H.



London Gazette, June 28, 1932.

### General Duties Branch

The follg. Flying Officers are granted permanent comms. in this rank (June 29):—A. R. Combe, J. Coverdale. The follg. Pilot Officers are promoted to rank of Flying Officer:—(April 24) W. E. Coope (with seny. of Oct. 24, 1931); (May 26) G. L. Best.

Sqdn. Ldr. P. L. Plant is placed on half-pay list, Scale A, from April 5 to April 17, inclusive. (Substituted for Gazette, April 12.) Wing Commr. L. M. Bailey, A.F.C., is placed on half-past list, Scale A, from May 27 to May 29, inclusive; Sqdn. Ldr. B. F. Moore is placed on retired list at his own request and is permitted to retain rank of Wing Commander (June 29); F/O. W. Anderson is placed on retired list (June 29); F/O. G. R. Jackson is transferred to Reserve, Class A (June 17); F/O. J. B. W. Pugh, A.F.C., is transferred to Reserve, Class A (June 18); F/O. A. D. Bennett is transferred to Reserve, Class C (June 24).

### Stores Branch

Sqdn. Ldr. A. T. Cooper is placed on retired list (June 29).

### Dental Branch

Flt.Lt. (Hon. Squadron Leader) E. A. Wheeler, L.D.S., relinquishes his temporary commn. on completion of duty (May 20).

## ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

J. P. Sloan is granted a commn. in Class AA (ii.) as a Pilot Officer on probation (June 14); F/O. H. C. Macphail is transferred from Class C to Class A (May 16); F/O. J. H. Goodden relinquishes his commn. on account ill-health (June 29); F/O. A. J. Winstanley relinquishes his commn. on completion of service and is granted permission to retain his rank (Oct. 23, 1931). Gazette March 8 concerning F/O. V. Vickers is cancelled.

### Stores Branch

P/O. E. H. Broad is transferred from Class C to Class B (June 20).

## SPECIAL RESERVE

### General Duties Branch

The follg. are granted comms. as Pilot Officers on probation:—H. M. Magrath (June 8); D. G. Lewis (June 10); J. R. T. Bradford (June 23).

## AUXILIARY AIR FORCE

### General Duties Branch

No. 603 (CITY OF EDINBURGH) (BOMBER) SQUADRON.—Lord Malcolm Avendale Douglas-Hamilton is granted a commn. as Flying Officer (June 8). The follg. are granted comms. as Pilot Officers:—G. H. Gatheral (May 24); J. G. E. Haig (June 11).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified.

### General Duties Branch

*Squadron Leaders:* A. W. Fletcher, O.B.E., D.F.C., A.F.C., to No. 1 Armoured Car Co., Hinaldi, Iraq, 1.6.32, to command, vice W/Cdr. V. Gaskell-Blackburn, D.S.C., A.F.C.; S. Graham, M.C., to No. 5 Flying Training School, Sealand, 18.6.32, for Engineer duties, vice S/Ldr. S. S. Benson.

*Flight Lieutenant C. B. Greet* to Station H.Q., Northolt; 15.6.32.

*Flying Officers:* G. N. Snarey, to Station H.Q., Duxford; 17.6.32. C. W. W. S. Conway, to No. 26 (A.C.) Sqdn., Catterick; 18.6.32. G. F. Whistondale, to No. 32 (F) Sqdn., Kenley; 23.6.32. R. B. Brown, to No. 503 (Co. of Lincoln) (B) Sqdn., Waddington; 29.6.32. T. P. Pilcher, to No. 9 (B) Sqdn., Boscombe Down; 20.6.32. W. J. F. Bull, to No. 10 (B) Sqdn., Boscombe Down; 20.6.32. D. M. Lynch-Staunton, to No. 10 (B) Sqdn., Boscombe Down; 20.6.32. N. W. Mackenzie, to No. 10 (B) Sqdn., Boscombe Down; 20.6.32. O. A. Morris, to No. 10 (B) Sqdn., Boscombe Down; 20.6.32. C. D. P. Franklin, to No. 12 (B) Sqdn., Andover; 20.6.32. E. V. Knowles, to No. 12 (B) Sqdn., Andover; 20.6.32. A. N. Spottiswoode, to No. 18 (B) Sqdn., Upper Heyford; 20.6.32. R. H. Younghusband, to No. 33 (B) Sqdn., Bicester; 20.6.32. B. S. Nicholl, to No. 35 (B) Sqdn., Bircham Newton; 20.6.32. R. G. Apthorp, to No. 40 (B) Sqdn., Upper Heyford; 20.6.32. R. G. Shaw, to No. 40 (B) Sqdn., Upper Heyford; 20.6.32. W. J. Smail, to No. 40 (B) Sqdn., Upper Heyford; 20.6.32. L. T.



## R.A.F. AIRCRAFT APPRENTICES

THE Air Ministry announces:—Three hundred and fifty aircraft apprentices, between the ages of 15 and 17, are required by the Royal Air Force for entry into the schools of technical training at Halton, Bucks., and at Cranwell, near Sleaford, Lincs. They will be enlisted as the result of an Open Competition\* and of a Limited Competition\*, and these Competitions will be held in the near future by the Civil Service Commissioners and the Air Ministry respectively. Boys in possession of an approved first school certificate may be admitted without other educational examination. Successful candidates will be required to complete a period of twelve years' regular Air Force service from the age of 18, in addition to the training period. At the age of 30 they return to civil life, but a proportion of those attaining N.C.O. rank, subject to Service requirements, may be permitted to re-engage to complete time for pension.

Full information regarding the dates of the respective examinations, the methods of entry and the aircraft apprentice scheme generally can be obtained upon application to the Secretary, Air Ministry (Aircraft Apprentices' Dept.), Gwydyr House, Whitehall, London, S.W.1. The sons of officers, warrant officers and senior N.C.O.'s of the three services will receive special consideration.

The scheme offers a good opportunity to well-educated boys of obtaining a three-years' apprentice course of a high standard followed by interesting technical employment. Already 8,000 aircraft apprentices have completed their training at the technical schools of the Royal Air Force.

The principal trades open to boys are metal fitter, a new trade brought into existence by the introduction of the metal aeroplane, which involves training in both fitting and sheet metal work; fitter (aero engine); fitter

(armourer); wireless operator-mechanic; and electrician. The apprentices are given a thorough training in their trade by highly qualified technical instructors and their general education is also carried on simultaneously by a staff of graduate teachers.

During the training period the present rate of pay is 1s. a day for the first two years, and 1s. 6d. a day thereafter until the apprentice has both attained the age of 18 and been posted to a unit on completing his training. When he is posted to a unit for duty as an aircraftman, the commencing rate of pay at present varies from 3s. 6d. to 5s. 6d. a day (24s. 6d. to 38s. 6d. a week) according to the marks obtained in the passing-out examination. He also receives free board and lodging and a uniform allowance. Subsequently there is the prospect of promotion on passing certain prescribed tests.

A few apprentices of special promise are granted free cadetship at the Royal Air Force College for training for commissioned rank.

For the remainder, opportunities arise later to volunteer to qualify in flying and become airman pilots. Between 100 and 120 of the latter are selected annually from volunteers of all trades. From amongst airman pilots a few are periodically selected for commissioned rank.

\* The Open Competition is conducted by the Civil Service Commissioners at the following centres:—

London. Belfast. Edinburgh. Plymouth. Manchester.  
Birmingham. Chatham. Cardiff. Portsmouth. Newcastle.

\* The Limited Competition is conducted at numerous centres selected by the various Local Education Authorities to bring the examination as near as possible to the neighbourhood in which their candidates reside.



## AIR POST STAMPS

By DOUGLAS ARMSTRONG

### Still Rising!

DESPITE financial depression the values of the rarer varieties of air post stamps continue to rise in the market in the face of an ever-increasing demand. The latest auction realisations in New York have set up new records for the much sought-after rarities of Newfoundland transatlantic air mails. A superb, unused copy of the "De Pinedo" flight stamp reached the phenomenal figure of just on £400. This represents an increase of more than 33½ per cent. upon the previous highest price and may be taken as an indication that the comparative scarcity of the particular item is at last coming to be realised. The merits of the "De Pinedo" stamp, as an investment, have been consistently advocated by the writer from the time when it could be readily picked up for a mere £50.

A mint specimen of the historic "Hawker" air mail stamp, described as "very fine," went for the equivalent of £280, which is also a slight advance upon the former record, whilst a mint "Columbia" variety (catalogued at £100) was actually knocked down for £83.

### Do-X Stamp Scandal

Newfoundland's latest air mail stamp, issued in connection with the visit of the Do-X flying-boat, as described in these notes last month, is providing aerophilatelists with a pretty problem. On the basis of "numbers issued" it should be worth at the most about £3 unused and, perhaps, £4-£5 "flown." Certain local speculators appear to have created a corner, however, and are demanding anything from \$10 to \$15 apiece for their holdings, which cost them originally \$1.50. On the representation that no more than 3,000 copies were printed many stamp dealers have bought by cable on this basis, only to find that the actual issue comprised 5,000 more; a supplementary printing having been made to cope with the rush for the stamp by get-rich-quick Wallingfords of St. John's. This has tended to create an entirely artificial standard of value, which cannot be well maintained when these "smart Alicks" come to unload. Collectors will be well advised to bide their time before adding this stamp to their collections. It is understood that the matter is to be the subject of a departmental inquiry.

### British Exhibits for Danzig

When Mr. R. E. R. Dalwick, the British Commissioner for the "Luposta" (International Air Post Exhibition) leaves for the free and beautiful city of Danzig this month he will take with him a choice lot of exhibits that have been entered for competition by British collectors. Viscountess Downe is sending her collection of British air mail cards and covers, whilst a specialised study of the souvenir cards and envelopes of the first U.K. aerial post and a series of African air mails will be exhibited by Mr. T. E. Field. Air stamp errors are the subject of an interesting and valuable display by Mr. W. MacHarg and rare air post covers that of Mr. P. J. Oakey. Mr. T. Ackroyd has entered a remarkable collection of Abyssinian air stamps. Miss Collins contributes a representative display of covers carried over the England-India air route and Miss Littleworth a type collection of aircraft depicted on stamps. An intensive study of the "Goya" air mail stamps of Spain is to be shown by Mr. E. King and literature relating to air post collecting by the Vallancey Press, Ltd., and D. Field, both of London. With such a galaxy of entries it is a foregone conclusion that Great Britain will secure at least a fair share of the awards at the "Luposta."

### Forthcoming Issues

New air post stamps are shortly to make their appearance in the Baltic states of Latvia and Lithuania respectively, the former in an "Eagle" motif and the latter in the usual triangular format; a provisional air stamp of 2½ piastres denomination is heralded by the Sudan Government for release on July 22. The Director of Posts and Telegraphs in the Argentine has authorised the preparation of a special set of "Zeppelin" mail stamps in denominations 5, 18 and 90 centavos to a total value of \$100,000. Canada will issue a special 6 cents air mail stamp with appropriate inscription on the occasion of the impending Imperial Economic Conference at Ottawa.

### Air Stamp Novelties

A novel type of stamp combining aerial postage with a fee for express delivery on arrival of letters at their

destination has just been introduced by the Italian Post Office. The two denominations form part of the Garibaldi anniversary series and bear the inscription "Posta Aerea Espresso." The design consists of three vertical panels, of which the centre one shows an aeroplane in flight, that on the left a full-length figure of Gen. Garibaldi himself, and the third, on the right, an equestrian statue. Their values and colours are 2L25 x 1L rose and grey-violet and 4L50 x 1L50 green and brown.

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### The "Invisible Fox"

THE voice of Sqd. Ldr. Maurice Wright is heard on the Editorial telephone. It says: "I was very glad that our new colour scheme on the 'Fox' is so successful." ??? "Yes, it evidently rendered not only the machine but the passengers invisible." More ??? Then the explanation. The Fairey "Fox" was at the S.B.A.C. Display at Hendon on June 27, although FLIGHT stated that it was absent. Not only was it present, but during the afternoon it was busy taking up passengers, of whom large numbers were carried. They represented some 8 to 10 nationalities. We apologise. By now we should know a "Fox" when we see it. However, we had had rather a hectic time, what with R.A.F. Display numbers and what not, and doubtless our faculties were not quite up to the mark.

### "Caterpillar" Ties

MEMBERS of the "Caterpillar Club"—which, we would remind our readers, is confined to airmen who have saved their lives by means of Irvin Air Chutes—are already supplied, on qualification, with "Caterpillar" tiepins. Now they will be able to obtain special ties wherein to place the latter, for we are informed that T. M. Lewin, of 39, Panton Street, Haymarket, S.W.1, have produced a tie for this purpose. It is navy blue with golden Caterpillar markings.

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## PUBLICATIONS RECEIVED

*Aeronautical Research Committee Reports and Memoranda: No. 1440. Stresses in a Wire Wheel with Non-Radial Spokes under Rim Loads. Parts I and II. By Prof. A. J. Sutton Pippard, Miss M. J. White and W. E. Francis. May, 1931. Price 1s. 3d. net. No. 1455. Sideslip and Performance of Multi-Engines Aircraft. By E. T. Jones. Jan., 1932. Price 6d. net. London: H.M. Stationery Office, W.C.2.*

*Modern Methods of Case-Hardening. The Cassel Cyanide Co., Ltd., (A Subsidiary Company of Imperial Chemical Industries, Ltd.), Oldbury, near Birmingham.*

*Dominion of Canada. Report on Civil Aviation and Civil Government Air Operations for the Year 1931. F. A. Acland, Ottawa, Canada. Price 25 cents.*

*Aeronautical Research Committee Reports and Memoranda: No. 1444. Torsion and Flexure of Cylinders and Tubes. By W. J. Duncan, February, 1932. Price 3s. 6d. net. No. 1445. Interference Between Bodies and Airscrews. By C. N. H. Lock and H. Bateman. June, 1931. Price 1s. 9d. net. No. 1458. Measurement of Take-Off and Landing Runs. By D. Rolinson. November, 1931. Price 4d. net. London: H.M. Stationery Office, W.C.2.*

### Catalogue

*Protecting and Safety Goggles. G. Rarti, Corso Firenze, 63, Turin, Italy.*

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## NEW COMPANIES REGISTERED

**BRITISH FLYING BOATS LIMITED** (Registered in Edinburgh). Capital £10,000 in £1 shares. General carriers of passengers, live stock, mails and goods, whether by air, land or sea, keepers of aerodromes, flying boat bases, seaplane stations, etc. Directors are not named.

**AIRWORK LIMITED**, Aeroplane manufacturers, Hounslow, Middlesex. Increase of Capital. The nominal capital has been increased by the addition of £30,000 beyond the registered capital of £90,000. The additional capital is divided into 60,000 "A" shares of 10/- each.

**WILTSHIRE SCHOOL OF FLYING AND COUNTRY CLUB, LTD.** Capital, £4,000 in £1 shares. Acquiring the business of a flying school and club proprietor carried on by J. E. D. Webb at High Post Aerodrome, Middle Woodford, Salisbury, as the "Wiltshire School of Flying and Country Club." Directors: J. E. D. Webb, High Post Aerodrome, Middle Woodford, Salisbury, flying instructor; E. G. Hordern, High Post Aerodrome, Middle Woodford, Salisbury, flying instructor. Solicitors: Hedges & Son, Wallingford, Berks.

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## AERONAUTICAL PATENT SPECIFICATIONS

*Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors.*

*(The numbers in brackets are those under which the Specification will be printed and abridged, etc.).*

### APPLIED FOR IN 1931

*Published July 7, 1932*

18,887. H. SCHULMAN. Rotary i.c. engines. (374,650.)

21,256. MASCHINENFABRIK AUGSBURG-NURNBERG A.-G. Remote starting and reversing devices for i.c. engines. (374,675.)

23,180. W., H., and H. VORTH. Rotary i.c. engines. (274,693.)